The Mining Journal

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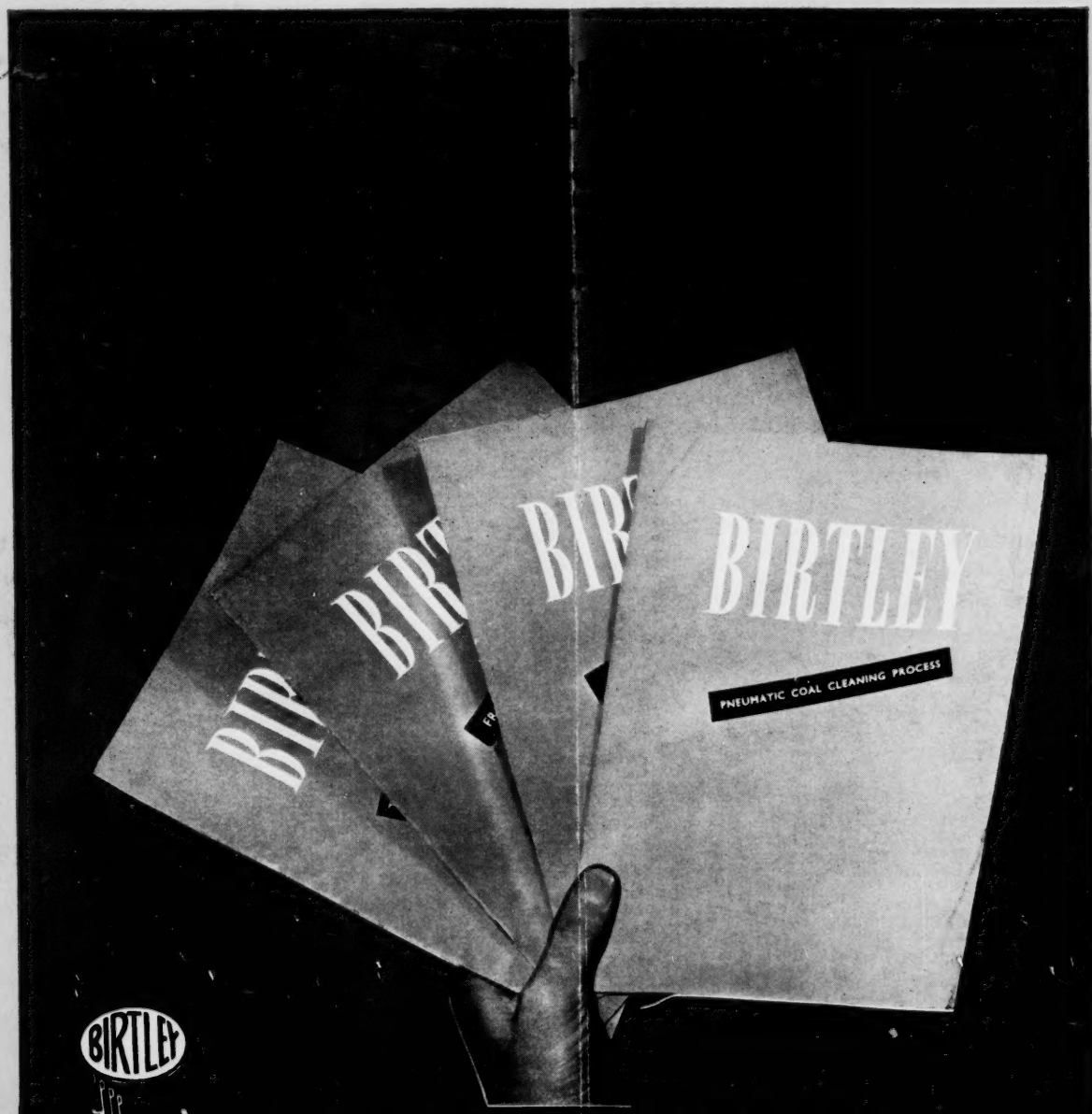

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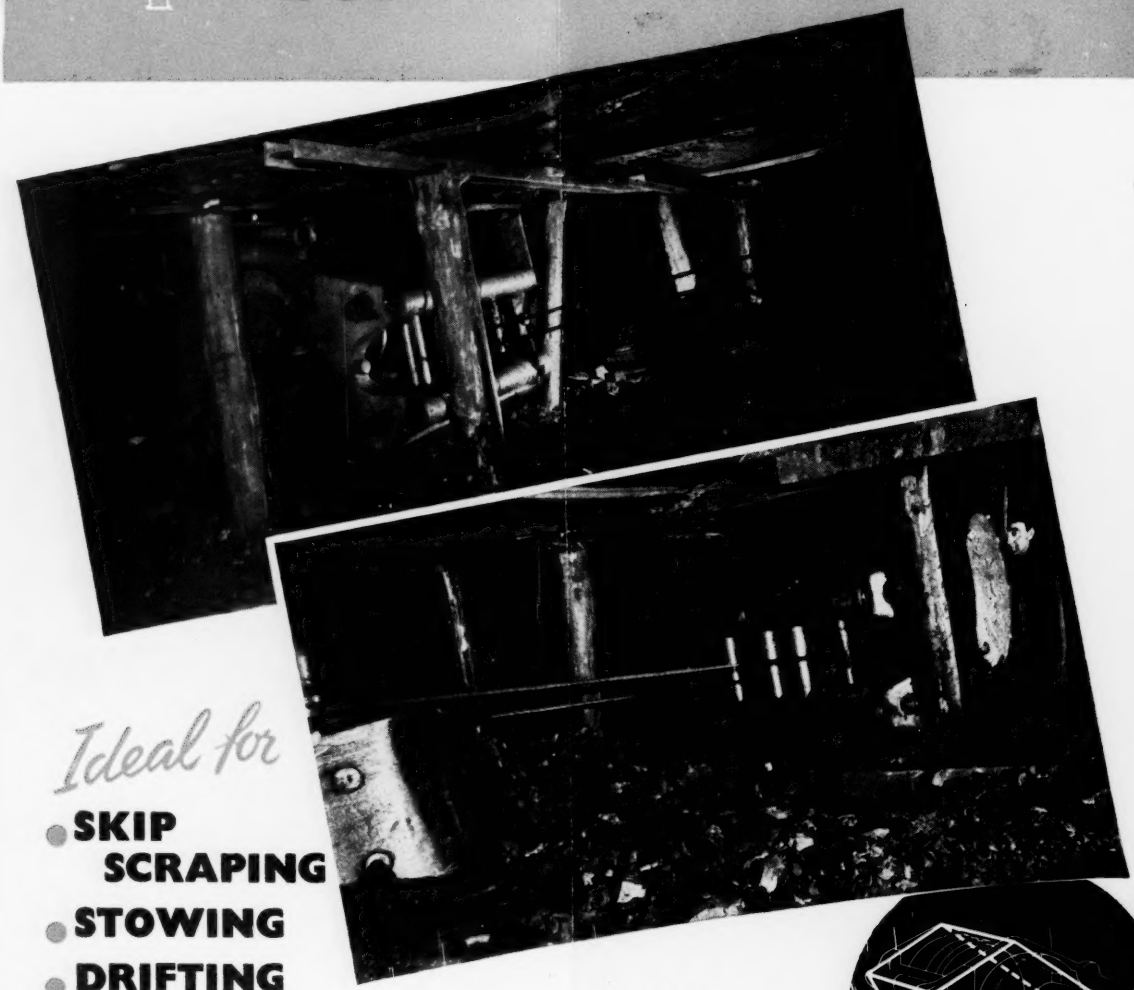

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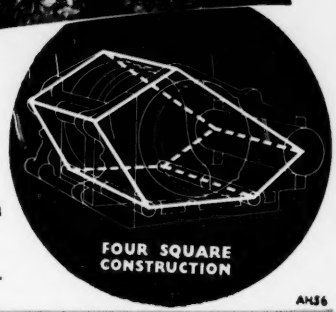

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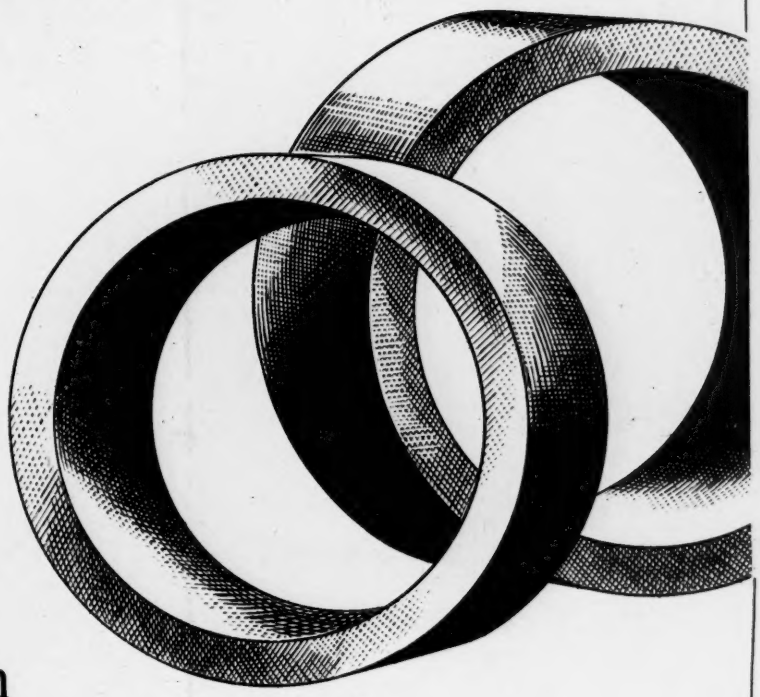

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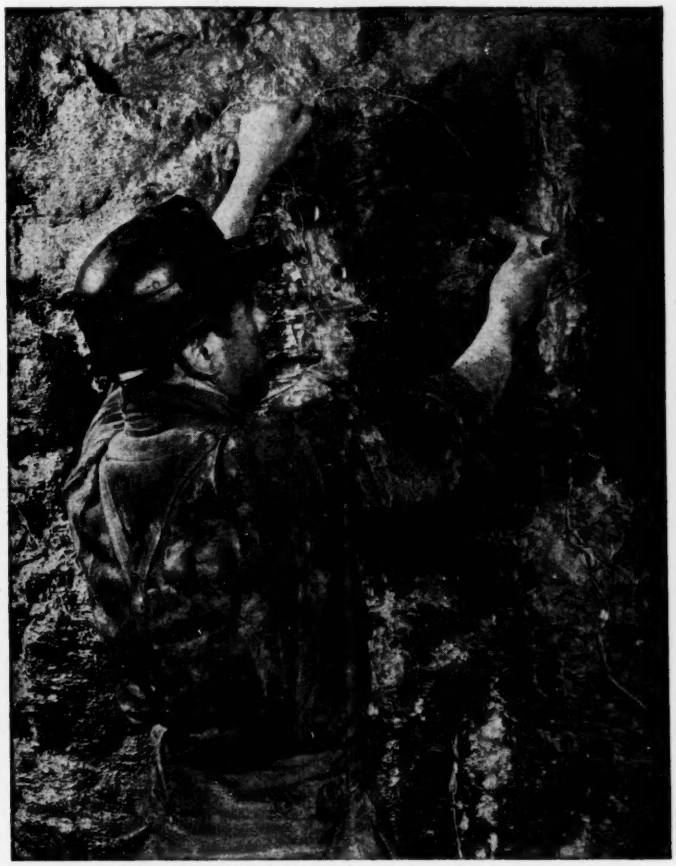

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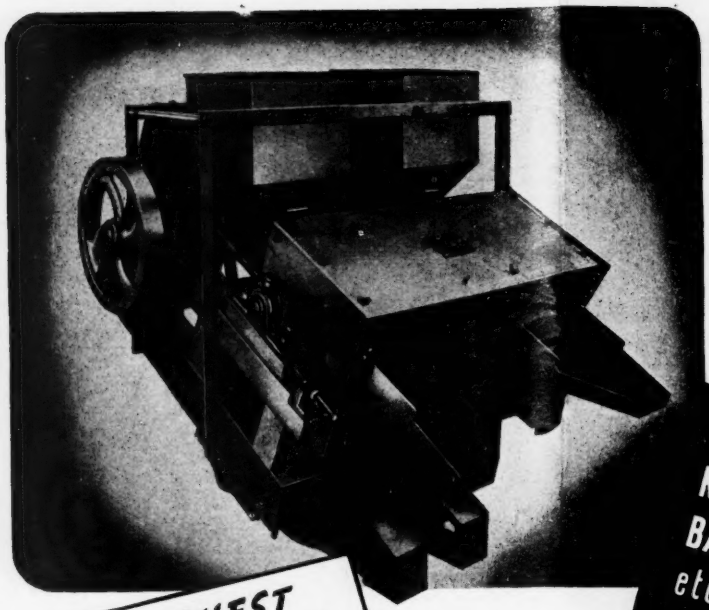

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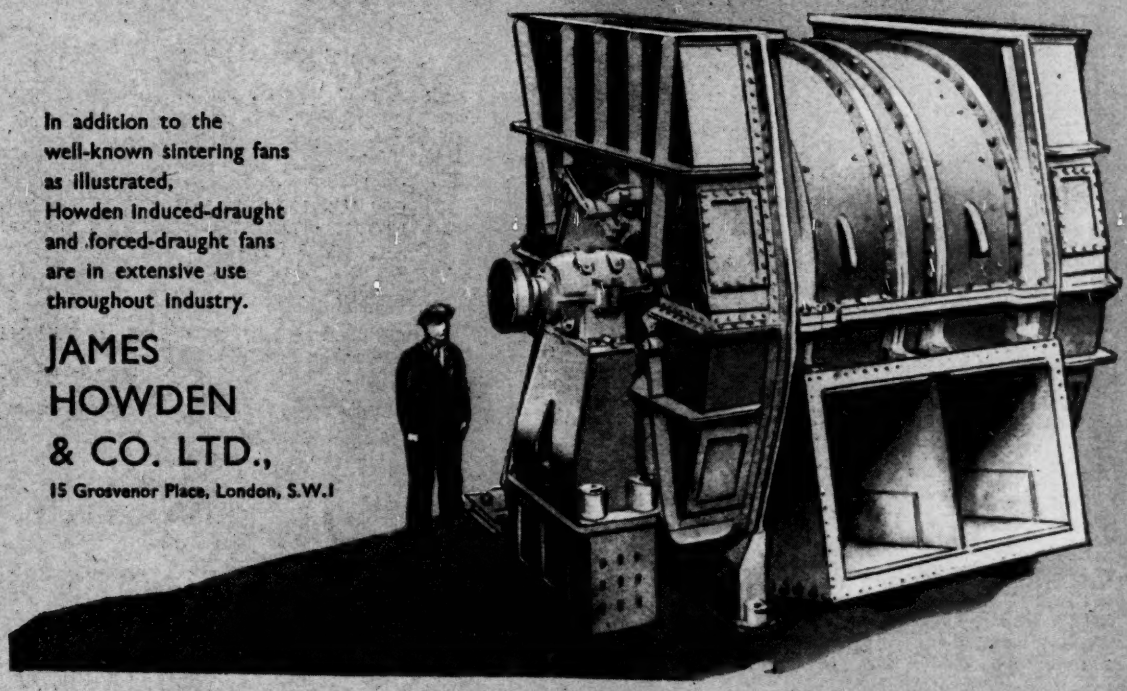

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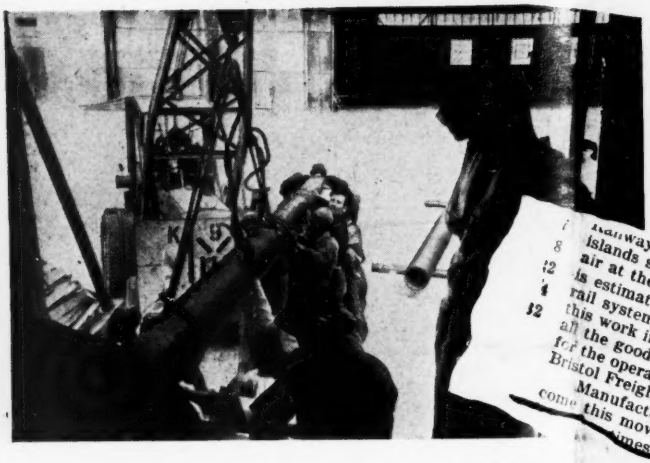

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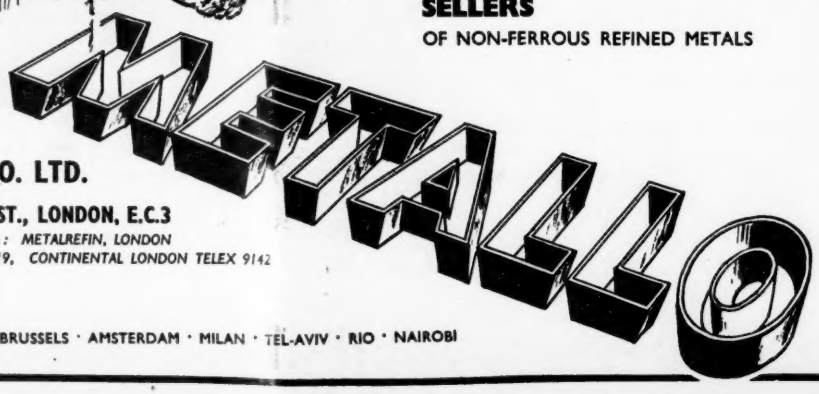

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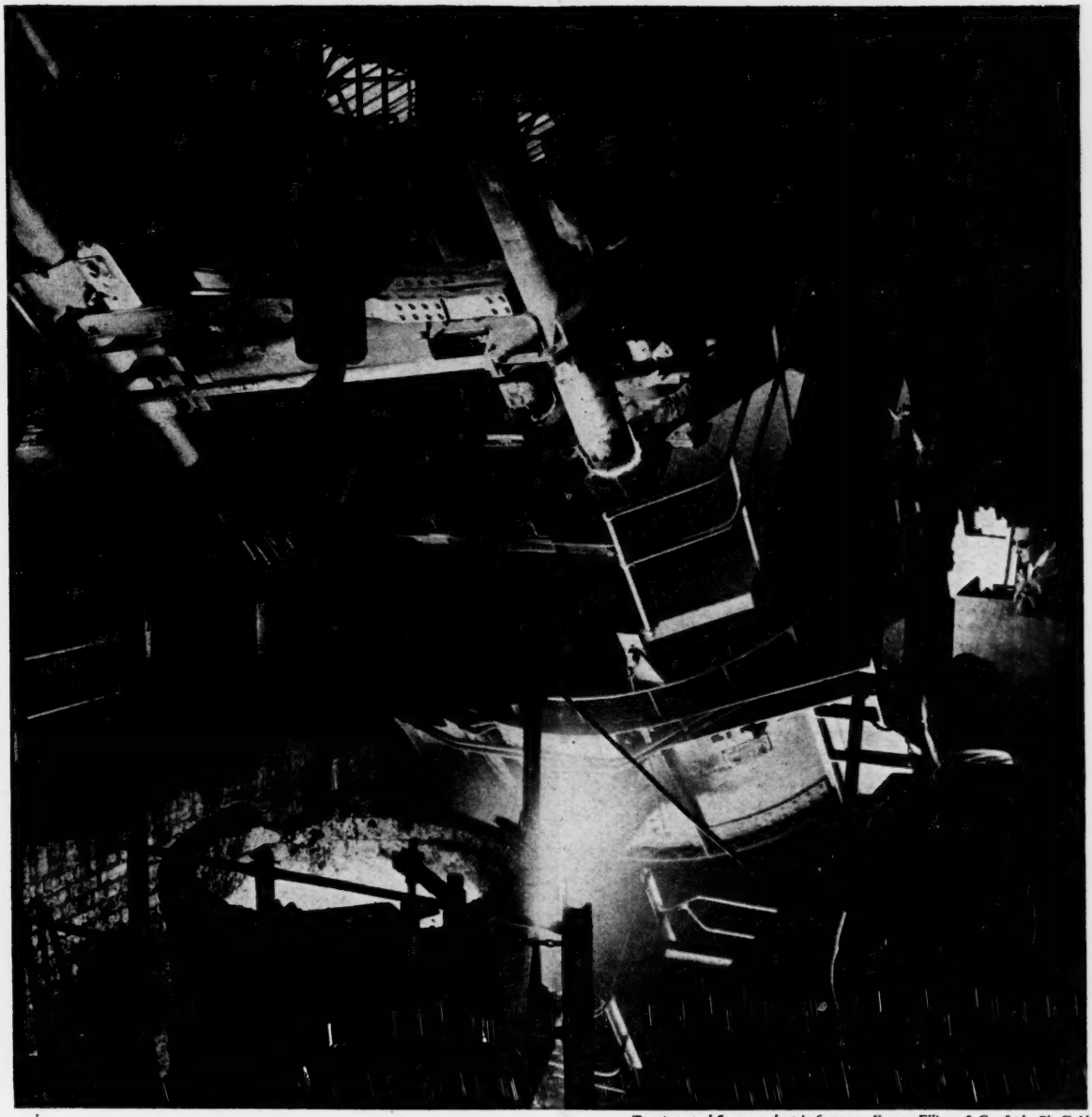

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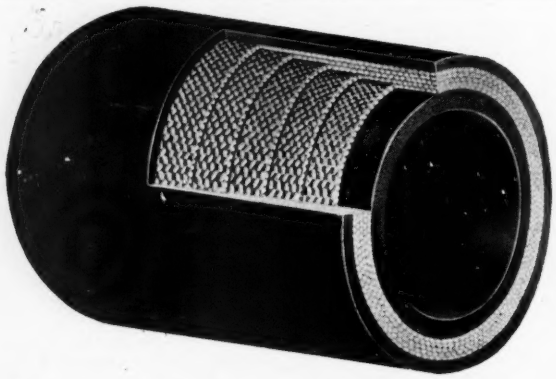

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The Mining Journal

Established 1835

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NOTES AND COMMENTS

Problems for the Tin Study Working Party

The price of tin having dipped to less than half of the record obtained early in 1951 has since recovered somewhat and we seem to detect a pause in the progress of the market while producers and consumers take stock of the situation and prospects.

In the middle of the month the working party of the International Tin Study Group meet in Brussels to discuss prospects of international action looking towards stabilization of prices over a period of years, in the hope that more general agreement may be reached than was experienced at similar meetings in the past, and one which would justify an application to the Geneva Conference for measures of more international control. Meanwhile over production of tin, so far as this can be measured by the partial production figures which emerge, continues and makes the continuation of stockpiling by the United States essential if current price levels are to be maintained, and still more, if they are to be improved. No one knows for certain how long stockpiling will be continued but there have been frequent warnings of a cessation or at least a reduction to be effected ere long. The president of the F.M.S. Chamber of Mines, Mr. Waring, told the annual meeting of the Association at Ipoh last week that the stockpile is likely to be completed next year, if not earlier. Meanwhile predictions of sensible early decline in output have yet to show signs of realization. In Malaya production in the first four months of the year was slightly above that of 1952 and 1951. Mr. Waring stated that while the total dredge output last year showed some decline, gravel pump mines increased appreciably, so, as we have observed on earlier occasions, former experience thus far is being repeated and the Chinese producer is making up for lower price by greater activity. In Indonesia exports were less for this period at 9,031 tons as compared with 9,559 tons in the first four months of last year, but exports are less reliable a figure for estimating fluctuations in output than are those for production which are not as yet available for the period. This is even more exemplified in the case of Bolivia, where there was a sudden jump in March to 4,934 tons to give a total for the first quarter of 8,074 tons compared with 8,065 tons a year ago. Without wishing to put too much stress on these comparatively short-term figures for the current year, it appears that last year's surplus of output over consumption of some 43,000 tons according to the Hague estimates is still running at something like that figure. Meanwhile ten years of international restriction leaves some bitter memories behind in Malaya and it is hardly surprising that producers there are less interested in the possibility of higher prices than they are in the prospect of enforced curtailment of output. Moreover, as one of our correspondents pointed out last week, they fear the reaction to control measures on the policy of consumers especially in the United States, deluged with charges of manipulating the position and gouging the helpless buyer, so recklessly advanced by Senator Johnson and others.

Meanwhile the proponents of restriction are in somewhat of a dilemma. In Malaya it is generally hoped that the success which has attended the operation against the Communists, and which has permitted General Templar recently to announce that at long last prospecting operations can be allowed at any rate in some areas of the Federation, will result in more tin-bearing areas being developed; in Bolivia, obviously the Government will require all the tin on which it can lay its hands to buttress the shaky economic conditions; in the Congo Géomines is working hard to bring its new Manono discoveries into exploitation; and if all these efforts to provide additional tin are to be threatened by international restriction action, there seems likely to be considerable differences of opinion on its advisability. Nor does it seem likely, in the present temper of the United States Congress, that a policy of easing the economic position in the chief tin-producing countries such as figured largely in the aid programmes so widely proclaimed in the Truman era will be implemented.

These are some of the complexities which will face the Brussels working party when they begin their studies ten days hence.

INCO Awarded Big U.S. Nickel-Copper Contract

The International Nickel Company of Canada has announced that it has signed a contract under which the U.S. Government has purchased for quick delivery a total of 120,000,000 lb. of metallic nickel and 100,000,000 lb. of electrolytic copper. The contract is with the Defence Materials Procurement Agency.

Deliveries under the contract will start this December. They are made feasible, according to Dr. John F. Thompson, chairman of International Nickel, only as the result of an entirely new project in the Sudbury district of Ontario which permits additional production of 2,000,000 lb. per month over the company's current peak nickel production capacity.

This, he said, is made possible by reason of the completion in recent months of certain mining and metallurgical developments which brought to a climax years of planning and research, and of the rapid advance in the company's underground mining expansion programme towards which it has devoted the major part of its $150,000,000 capital expenditures made with its own funds since early in World War II.

Deliveries under the contract will be at the rate of 2,000,000 lb. per month for metallic nickel and 1,666,666 lb. per month for electrolytic copper. These deliveries will start in December and are scheduled to be completed in 1958, coinciding approximately with the time when according to published announcements new nickel production capacity of others now under development may be expected to come into full operation.

With demand staying up, the company's scheduled production will permit its mines to deliver to the free world over the five-year period ending with 1958 a total of approximately 1,380,000,000 lb. of nickel. This is an increase of 325,000,000 lb. over deliveries for the five years, 1945-1949, immediately preceding Korea.

The metallic nickel to be delivered under the new contract is being purchased by D.M.P.A. at a price which reflects present market price, plus an allowance for amortization and additional costs of production. The price of the electrolytic copper is 27 c. (Canadian) per lb. Both prices are subject to escalation on an agreed index of changes in specified economic factors.

Deliveries under the new contract will not require diversion of nickel from that which is currently being supplied to the nickel trade from the company's regular production. By substantially increasing the nickel supply it can be expected that larger quantities of nickel should be available for all purposes.

Operation of the new project involves mining and treating 10,000,000 tons of underground ores which are not commercial under present conditions. It will also require substantial capital expenditures by the company for underground and surface equipment.

The contract is the culmination of negotiations initiated by requests from D.M.P.A. that International Nickel advise the U.S. Government of any developments through which quick and temporary additional supplies of nickel could be obtained for the U.S. for the purpose of transfer to the national stockpile or for current consumption in the U.S. to the extent that other nickel supplies may be insufficient to satisfy such consumption.

To meet requirements for additional nickel, the company urgently speeded up its exploitation and drilling programmes in areas outside of the Sudbury district and was able to develop and present certain long-range and major projects which could be brought into production or serve as standby capacity for any emergency. In view of the number of years which would be required before these projects could be completed, the U.S. Government at this time is requesting the company to proceed only with the present Sudbury district project for quick additional supplies.

On March 12, 1953, the company was able to advise D.M.P.A. of the completion of research related to new developments in its mining and metallurgical processes. The principal development which makes the new project possible is the recent completion of extended pilot plant studies of a process for the treatment of nickel-bearing pyrrhotite for the recovery of nickel and iron.

This process, under continuous study and development for several years, involves removal from the company's ores of a considerable portion of the iron content, which can be recovered as marketable iron ore. The company will be proceeding immediately with plans for installation of plant for the carrying out of this latter operation.

The company already has at Sudbury the world's largest non-ferrous base-metal underground mining operation. The nearing of completion of the company's post-war underground mining development programme, in consequence of which the company will be able to hoist shortly 13,000,000 tons of ore per year from underground, is likewise a decisive factor in the realization of the project.

An Interesting Mining Development

A group of twelve Umtali residents have formed a company, the purpose of which is the re-opening of the old Baddeley Copper Mine, near Headlands, an area situated between Salisbury and Umtali in Southern Rhodesia. The new company has the mineral rights over two nearby prospects, the Dora and Makooi.

The area already pegged is 14 miles in length, and may be all one reef. Assayed values are reported to reach 35 per cent, with a possible average of six against 16 and three per cent respectively on the Copperbelt in Northern Rhodesia. The mine has not been worked since the death of its owner, Mr. F. Baddeley, 23 years ago.

Chairman of the new company is Mr. L. Mallac, a mining financier whose origin is the island of Mauritius, with Mr. S. Anda and Mr. T. A. Moore as directors. The underground staff consists of Mr. J. Meikle as mining engineer and Mr. A. L. Stover as miner.

Rock and land falls have closed up the old Inyati workings, but the new company hopes soon to drive an adit to the interior reaches, and then will be considerably more enlightened as to the prospects of the workings than at present. However, there are great masses of surface sulphide ore with so high a percentage of copper that currently African labourers are employed in picking up the heaviest and most likely pieces for bagging for immediate despatch to the broker without the necessity of crushing.

Localizing Chrome Mining and Separation in Yugoslavia

In *The Mining Journal* of March 20, 1953, a comprehensive article on the expanding mining industry of Yugoslavia coincided with the visit of Marshal Tito to this country. It was stated in those pages that Yugoslavia is one of the world's largest chrome ore producers, one source being the Deva Basin on the Albanian border. Subsequent information of this particular district reveals that a new chrome ore separation plant is to be built there in the vicinity of Djakovica in the autonomous province of Kosmet, Serbia.

In the new plant, ore will be dressed on the vibration banks by the wet-gravitation method, and two main products will be obtained. These will comprise large grain and fine grain concentrates, the former to be utilized in the production of chrome-magnesite bricks, and the latter to be processed at the new Chrome Compounds works at Radusa. It is anticipated that a proportion of the fine grain processings will be exported. The metal yield should provide a minimum of 74 per cent and 47 per cent Cr_2O_3 in the concentrates production.

The ore supply for this works will come from the Deva and Babaj boks mines. The installation of the new separation plant, therefore, serves to localize all processes from mining to final treatments in that particular area.

Canada

(From Our Own Correspondent)

Toronto, May 9.

Declining commodity prices are encouraging gold producers to believe a trend has set in which may ease the distress under which gold producing mines have been operating in recent years. Also, now that the American dollar has risen to parity with the Canadian dollar, the producers of gold in Canada are again receiving the full price of $35 an oz. Added to these factors is a growing tendency to believe the time is approaching when governments may wish to pay more than $35 an oz. for gold. The sober truth is that the world output of gold, exclusive of Russia, is at a rate of about $850,000,000 a year, but with only about $130,000,000 going into the ownership of governments. In this fact there is believed to be vast significance. Certainly the price of $35 an oz. which prevailed as far back as 1934 has no place in the higher world economy of 1953. Opinion is growing that a higher price for gold would stimulate world trade.

UNEASINESS IN LEAD-ZINC FIELD

Bills before the Congress of the United States are designed to impose a tariff, on a sliding scale, against zinc and lead going into that country. This has aroused uneasiness among zinc and lead producers in Canada. Latest news is that a compromise measure will be introduced soon. In the meantime, some Canadian producers had prepared for the worst, with expectations of reduced production of both metals. Canadian mines produced zinc worth $133,000,000 last year, of which 87 per cent was for export. This illustrates the extent to which zinc producers are at the mercy of foreign markets. Lead production in 1952 was valued at $53,000,000 of which 72 per cent was for export. It is generally conceded that tariff measures on a sliding scale in the United States would introduce instability and uncertainty, rendering it difficult to lay long range production plans.

New discoveries of asbestos have been made in Northern Ontario at a point about 15 miles north of Heron Bay on the north shore of Lake Superior. Discoveries have been made over a wide area, and a staking rush has developed. Work during the present summer is expected to determine the quality and commercial possibilities of the area. Playing a leading part in the exploratory work is Pic River Mines, and MacLeod-Cockshutt Gold Mining. Canada, by far the largest producer of asbestos in the world, last year produced $89,000,000, of which 99 per cent was for export. An additional area of production would contribute still further to the pre-eminence of Canada as an exporter of asbestos.

THE URANIUM STAMPEDE

Claim staking in the uranium fields of Beaverlodge Lake in the province of Saskatchewan has reached boom proportions. Although the recording office set up in the dead of the cold northern winter is nothing more than a large tent, the month of March saw more than 5,000 mining claims recorded. Literally everybody in the area, workers, merchants, etc,, have joined in the staking stampede.

Chief cause of the excitement has been the diamond drill results on the Gunner property, a company with $5,000,000 share capital and with the shares having soared to over $10 per share. Added to Gunner, of course, are the extensive properties owned and operated by the Canadian government on which some $15,000,000 is being spent, and with large scale production of uranium about to commence. Staking has already extended over a length of nearly 50 miles, both to the east and west of Uranium City, the new model community being established in the heart of the field—a new landmark in this new land which appears to hold the key to one of the doorways to the new atomic age.

Life is rugged at present in the new uranium field. But, with a new city rising in the heart of it all, and with great fortunes falling to the lot of many of the pioneers, an era of romance and glamour is looming up for a spectacular future for Uranium City. Those of us who have in the past witnessed the stride of wealth across new stages may visualize the swagger, the glitter, and the noise of masses of men and women caught in the swirl of sudden wealth—and the lavish display which inevitably follows. Many who have suffered hardship and privation for many years in fruitless search, are here suddenly become rich and must have their fling—that will be a part of the early years of this new Uranium City. The very isolation of the place may be expected to lend a special appeal and aurora to the new community.

OFFICIAL ESTIMATES

Figures for production of uranium in Canada may not be published, but the following notes on the main activities to occur during 1952 have lately been released by official sources.

The outstanding feature of the year was the great amount of work done in preparing the Ace mine of Eldorado Mining and Refining Limited, north of Lake Athabasca in Saskatchewan, for production, which was expected to commence in April, 1953, and the large amount of work done by private companies in the same region. Important work was also done in several other parts of the country.

At the end of 1951 it was estimated that 556 radioactive properties or unstaked occurrences were known in Canada. By far the greater part of these contain uranium rather than thorium. Some properties contain many individual occurrences, and the total number of such occurrences was estimated to be more than 3,000. Figures for 1952 are not yet available, but this estimate will be increased considerably.

It is, however, indicated that too much importance should not be attached to large totals because most of the occurrences are believed to be unimportant, but a reasonable number are worthy of exploration and it is anticipated that some will eventually be productive.

THE NATIONAL PICTURE

Capital investment in Canada continues at a rate of very close to $500,000,000 per month and is expected to reach $5,500,000,000 for the current year. All this points towards marked expansion of industry.

Development in the petroleum fields of the Canadian west goes on apace. Estimates have been made that expenditures on exploration and development in connection with petroleum and gas will exceed $400,000,000 during the current year. Construction of an additional link of 635 miles to the Interprovincial Pipe Line system from Superior at the head of Lake Superior to Sarnia, Ontario, will give the line a total length of 1,765 miles, the longest crude oil pipeline in the world. The added 635 miles will be completed late this year at an estimated cost of $76,000,000. Altogether the 1,765-mile system will then have cost close to $200,000,000.

Delivery of specially designed ore carrying cars for the new railway to the iron ranges of Quebec and Labrador has commenced. The initial contract is for some 1,200 such cars, each with a capacity of 95 tons. The cars are being roller-bearing equipped because of the severe weather conditions which prevail in the area during winter season. The new line runs north for 357 miles from the north shore of the Gulf of St. Lawrence.

The Mineral Resources of Nyasaland

By W. E. SINCLAIR, M.I.M.M.

In our issue of May 9, 1952, an article on the mineral resources of Nyasaland appeared as Number 9 of a series devoted to Colonial minerals development, and gave details of the systematic mapping and prospecting taking place in the territory, with special reference to coal and potential monazite deposits. The following article enlarges on the information supplied by its predecessor, dealing as it does with the history of prospecting activities in Nyasaland and presenting an overall picture of the progress achieved in that field to date. The article is of particular interest in view of Nyasaland's participation in the newly-formed Central African Federation.

Copper, gold, lead, asbestos and other minerals are being produced by Nyasaland's neighbours, and yet comparatively little mining has taken place in the country itself. The only reason to account for this is its somewhat isolated position and, until recently, its inaccessibility. To-day regular air services bring it within easy reach of most centres, and with improved roads and railway motor services, which link up with the main railway system, Blantyre and Limbe, the main towns, are only 355 miles from the nearest seaport at Biera.

Consequently the former main drawback to mining enterprise is fast disappearing.

The difficulties of transport were not wholly to blame for the backwardness in mining development, however, the main trouble was the lack of gold. In most undeveloped countries initial prospecting consisted of a search for gold, and in Nyasaland the pioneers were disappointed for although traces of alluvial gold were found, no economic lodes or deposits were located, and geologically the country does not give promise of any positive gold occurrences. This quite possibly damped the enthusiasm, not only of these pioneers, but of later prospectors.

MINING ENTERPRISE

Following these early disappointments there was little serious economic investigation of the mineral prospects of the country for some years. Meanwhile, however, the Geological Survey was responsible for a great deal of useful work, which was to prove most valuable when an increasing demand and higher price for base minerals were created by war requirements.

This first led to the opening up and exploitation of the easily won minerals, corundum and mica. Corundum was worked at Tambani in the Southern Province where it is found as an eluvial deposit adjoining the nepheline-syenite intrusives and pegmatite veins connected with the basal gneissic complex.

Similarly, mica has been won from surface exposures of pegmatite bodies where the mineral occurs in mica-and-graphite-schists. The occurrences are fairly widespread ranging from Dedza in the Kirk Mountains, where the main production came from, and at Mzimba and in the North Nyasa districts.

No extensive work has been done on any of these detrital deposits to determine the value of the main pegmatite bodies.

Although there has not been any serious development of the country's coal measures, sufficient exploratory work has been done to prove that this mineral is one of the most important in the country. The coal occurs in the Ecca beds of the Karroo System which covers large areas of the Rift Valley in the south and is also established in the north along the Nyika Plateau at Livingstonia on the west shore of Lake Nyasa.

The Karroo formation in the Zambesi basin is notably different from that in the north by the strong development of dolerite dykes which are intrusive into the Karroo rocks. Except for differences in the physical characteristics such as inclination of the beds and the occurrence of these dykes, or faulting in the northern field, the coal exposed throughout is fairly comparable in values.

Although inclined to be shaley and of sub-bituminous quality, with a high ash content, the coal generally would appear to be of some economic value, indeed analyses indicate that they compare favourably with some of the Transvaal coals.

Further work is really necessary to determine the full extent of these coalfields.

The most prominent mountain massif, Mlange Mountain, which is a feature of the eastern flank of the Shiré Highlands, is the result of intrusions of syenite and nepheline-syenites which as a result of weathering has formed a deposit of bauxite on its highest peneplaned surface. It is in this area that the true laterite or bauxite material occurs. An extensive amount of testing work has proved the bauxite ore body to be of considerable size (one estimate quotes 60,000,000 tons) and the ore, except for the existence of quartz crystals is of reasonably good value.

Interest has recently been directed to the opening up of kyanite deposits that occur in the basement gneisses of the Kirk Range, in the Ncheu district. The mineral occurs as segregations in kyanite-quartz-schist bands in the formation where many thousand tons of high grade kyanite are estimated to occur *in situ* besides the existence of many large weathered boulders. Some bulk shipments of the ore have already been made for the purpose of testing.

THE MINERAL POTENTIAL

Amphibole asbestos deposits are being investigated in the same area as the kyanite occurrences, in the Ncheu Kirk Mountains district. The deposits occur in the basic schist formation and the ore consists of a massive stellate fibre form. The fibre is a type of anthophyllite asbestos and is soft and fibrous in texture, variable in tensile strength and white in colour. No deep prospecting work has yet been done, but the surface indications are fairly extensive. In these the outcropping fibre is sometimes patchy and discoloured because of weathering and consequent oxidation (1).

Graphite occurs in several districts, sometimes associated with mica as in the schists and gneisses in the Dedza area on the Kirk Mountain Range. The possible quantities available in this region would give promise of deposits of some value but insufficient exploratory work has been done to justify this prediction.

In the winning of the corundum in the Tambani area previously referred to, the mineral zircon was found associated with the corundum in alluvium in the nepheline-syenite rocks.

There have been numerous indications of the smelting of iron ores, limonite and haematite, by the natives in the northern provinces, but the most promising indications of haematite occur as massive boulders near Dzunje in the Ncheu district where the occurrences appear to be fairly extensive

In the Southern Province titaniferous ilmenite, magnetite and iron ores are found as rubble concentrations or in

mica sands. Rutile also occurs with the ilmenite sands. These minerals are evidently derived from veins in quartzite bands in the gneisses.

The mineral apatite has been reported as occurring in several places, but the most important instance is in the Ncheu district where it is found associated with phlogopite.

OTHER MINERAL OCCURRENCES

The finding of fine monazite concentrates in river sands, evidently derived from granite intrusive into the quartzites and mica schists has naturally prompted a search for a concentration of this mineral. A possible ore body in a volcanic carbonatite structure is now being examined at Kangankunde in the Ncheu district.

Similar formations, which are known locally as the Chilwa Series of ring structures, are presently being investigated as to their economic value as deposits of the pyrochlore-niobium minerals.

Traces of copper both as sulphides and as pieces of malachite have been reported in the Port Herald Hills and galena with silver has also been found south-west of Dowa.

Reports of many other minor minerals are given by the Geological Survey (2) such as kaolin, garnet, talc and quartz crystals, but none of these has been opened up to prove their economic importance.

The possibility of the establishment of a successful cement industry is assured since suitable limestone and clays occur in abundance and although no large surface deposits of gypsum have been found, a considerable body of gypsiferous grits and sandstones were located in boreholes which were put down to prove the Chiromo coalfields.

In addition it has been pointed out by Dr. F. Dixey that the floor of Lake Malombe is covered with a ten foot bed of calcareous clays which are eminently suitable for the manufacture of natural cement.

With the assistance of the present and past work of the Geological Survey, several large mining companies are undertaking serious exploratory investigations into the mineral possibilities of the Protectorate.

This must bring in its train the establishment of secondary undertakings such as cement manufacture and other allied industries.

IMPORTANCE TO FEDERATION

Already there exists a valuable source of aluminium in the Mlange bauxite deposits. The electrical power necessary for their exploitation lies unharnessed, as yet, in the Great Shiré River. Alternatively, or in addition, the extensive coal measures are strategically situated to assist as a power factor in the economic development of the country's resources.

The opening up of the country's primary resources should prove a useful link in the federation with the Rhodesias, both in benefits to the country itself and to the Empire generally.

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The Use of Geochemistry in Prospecting at Mount Isa, Australia

By PATRICK DAVIDSON

The utilization of geochemistry in prospecting activities at Mount Isa is part of a wide plan to accelerate the survey of Australia's mineral wealth. Prospectors have found much evidence of mineral wealth in the northern tropical regions of the continent during recent years, although final assessment of potential values would merely constitute bold prophecy. The following article outlines the methods used in geochemical prospecting in the Mount Isa area, and emphasizes the simplicity of the method.

A bold new plan designed to accelerate the survey of Australian mineral wealth is being prepared by the Commonwealth Government. The plan calls for the dispatch of geochemical prospectors to the known and potential areas of mineralization in the continent. This initial enterprise, however, is regarded as being merely the short-range aim. The ultimate or long-range policy is to explore chemically every part of the Australian continent not previously thoroughly tested by other means.

Certain geologists envisage a mining industry in the north, complete with cities and secondary industries, while more conservative opinion considers that the identical districts will undergo a tremendous development based on activity resulting from proved mineral resources.

The chemist has now taken his place in the general activity by employing a simple and speedy method of prospecting which provides a technique new to Australia.

Dr. V. P. Sokoloff, of the United States Government Geological Survey, introduced the practice of the science to Australia in 1948-49. Accompanied by three Australian scientists, Mr. J. R. Tresize, manager of the Zinc Corporation, Broken Hill, Mr. Adrian Debnam and Mr. W. B. Dallwitz, of the Government's Bureau of Mineral Resources, Dr. Sokoloff toured a considerable area of Eastern Australia and demonstrated the methods of geochemistry on the mineral fields at Mount Garnet, Queensland, Cobar, New South Wales, Wallaroo, South Australia, and Mount Lyell and Zeehan in Tasmania. When the demonstration work ended, the three Australians relayed the technique of geochemistry to other Australian geologists and chemists.

One of the fields chosen for experiment was Mount Isa in north-west Queensland, a mine which lies in an isloated area. The silver-lead-zinc-copper deposits exploited by the company are found in shale and dolomite formations that are part of an ancient shield of pre-Cambrian rock that protrudes into Queensland from Northern Territory.

Mr. Debnam was chosen to conduct this experimental research by the Bureau of Mineral Resources, a section of the Governmental Department of National Development. He and his assistant, Mr. Elliott, decided upon a work routine that comprised one day in the field with the next spent in the laboratory, which was made available by Mount Isa Mines. By pursuance of this routine, it was ensured that samples collected on a field day would be tested and classified almost immediately before fresh samples were collected.

The area selected for the initial tests was situated approximately 20 miles from Mount Isa. Despite prospecting activity in the area which had extended through two or three generations, no discoveries warranting the establishment of a mine had been made. Geochemical samples are normally collected from a selected area on the grid system, and pegs were still erect in the area after surveying operations by Mount Isa Mines.

Mr. Debnam (right) and Mr. Elliott at field work 30 miles from Mount Isa. The wheel-shaped figure on the rock is an Aboriginal wall carving

Photo: Courtesy Australian News and Information Bureau

In his operational method, Mr. Debnam pegged a centre point and measured a 100 ft. grid in all directions by tape and compass, so that on completion his grid system measured between 2,000 ft. and 3,000 ft. in length by 800 ft. width. Soil samples were collected at each intersection point of the grid. The holes varied in depth from 12 in. to 18 in., and approximately ½ lb. of soil was taken from each hole. These samples were encased and marked for locality as in normal underground sampling practice.

The second phase of the overall operation was carried out in the laboratory, where samples were diluted with a small weighed quantity of dilute acid. Each sample was then filtered and the filtrate tested with diphenylthiocarbazone as an organic reagent to indicate the presence of copper, lead or zinc.

Only lead tests were carried out in the Mount Isa area unless a large copper content was obviously present. As is logical to suppose, geochemists utilize reagents to suit the type of ground with which they are working. The results obtained by the tests are not accurate quantitatively, as it is desired at the initial stage to determine only relative quantities.

USE OF THEORY AND PRACTICE

Subsequent operations embrace both theoretical and practical activities. The relative assay of each sample is indicated on a large-scale map which in addition portrays all natural features, survey pegs, outcrops and the like. Should the assay results seem favourable, the next task is to core-drill the location in an examination of strata to a maximum depth of 2,000 ft. The standard diamond-bit drill is utilized in this operation and normal-type cores recovered. It is thus obvious that no revolutionary departure from general practice is included in the methods described, theoretical and practical work being generally of a traditional nature.

However, the new technique of geochemistry itself contributes a considerable financial saving in prospecting activities. For currently, the commonest method of locating silver-lead-zinc-copper ore is to costean an area by gouging large trenches by means of bulldozers. Some of these excavations are carried to a comparative depth in attempts to uncover speedily the anticipated seam. Thus the activities of the geochemist as now practised, for instance, in the Mount Isa area, constitute a considerable saving of expenditure and a considerable reduction in working time.

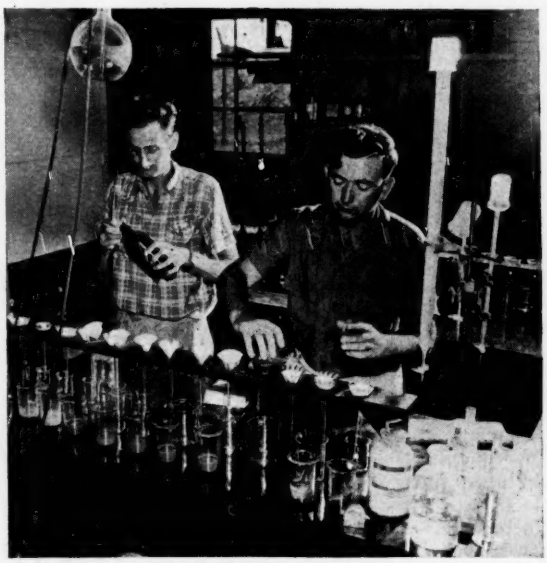
At Mount Isa Mr. Debnam carried on activities on a portion of the company's leases, with the permission of the company. His work was undertaken primarily on behalf of the Government, but all results and information accruing were given to the company. An example of this agreement was shown by an activity in the Mount Isa southern prospecting area, where the company considered a certain section to offer an encouraging lead prospect. The geochemical tests revealed that no lead existed in that particular area, but that there was the possibility of a valuable copper deposit.

In other sections two new lead deposits were located while two others previously believed to be good prospects, were shown to be uneconomical. In other instances, after checks to see if the results were reproduced, Mr. Debnam tested by geochemical methods areas that had not previously been prospected or costeaned and in many cases was rewarded by high test results.

LONG RANGE NATIONAL PLAN

As already indicated, the long-range plan of the Department of National Development is to prepare a fully detailed map of Australia's mineral wealth. The utilization of geochemical prospecting teams will remove much laborious and lengthy work from Australian surveyors, geologists, mineralogists and geophysicists.

In our issue of May 29, 1953, our Australian correspondent gave passing mention to similar activities when he reported that the Western Australian Department of Mines is to encourage gold mining and "will carry out its own diamond drilling on such prospects, guided by the advice of its own geologists." While this report does not, of course, indicate the use of geochemical prospecting in the area, it does reveal the interest of State Governments in minerals exploitation



Mr. Debnam (left) and Mr. Elliott carrying out laboratory tests as the second phase of their work plan

Photo: Courtesy Australian News and Information Bureau

A Specialized Method of Smelting Low-grade Lead Ores

By C. C DOWNIE

The prevalent high prices of non-ferrous metals have led to a considerable increase of interest in the reclamation of inferior ores and residues, the working of which was formerly regarded as uneconomical. The chief interest at the present time is centred on the poor ores or mixed sulphides containing iron, lead and zinc sulphides averaging approximately 10 per cent lead. These were previously completely ignored, and in the following article the author describes a smelting method which utilizes a gas-fired roasting furnace combined with a cylindrical sloping roaster. The Parkes process is used in the final recovery of silver, a practice which aids in the economical efficiency of the method.

One feature which has arisen as a result of the prevailing high market prices of non-ferrous metals generally is that poorer ores and residues which formerly were considered uneconomical to work may now be reclaimed wherever possible. Lead is no exception to this rule, and already all possible sources, howsoever remote, are having their treatment at least contemplated, if not actually being dealt with, as may be gathered from investigations at present under way with what were formerly regarded as worked-out deposits. This can be partly accounted for by the fact that lead is comparatively easily smelted and refined directly, unlike the more circuituous methods necessary with most other metals. From rich galena, upwards of 70 per cent of the charge is directly obtained by blast furnace smelting, but so far as this country is concerned, few sources of the kind remain.

CURRENT SOURCES OF SUPPLY

The various residues accumulating from plumbers, brass-founders, electrical workshops, and railway companies, not to mention solder ashes, type ashes, and associated materials, are to-day sought after on a competitive basis by regular refiners, but despite these sources of supply the shortage remains acute in some quarters. The fume from old lead refineries is literally unobtainable, although in pre-war days it frequently accumulated in large tonnages unused, while even slags, and particularly those from reverberatory processing, sometimes hold a sufficiency of lead to justify reclamation.

More interest at the present time devolves upon those poorer ores or mixed sulphides containing iron, lead, and zinc sulphides averaging some 10 per cent lead, and which in pre-war days were completely ignored. Where these could be easily sintered, they were occasionally included in the regular charges, but otherwise did not offer much prospect of economical working. A further difficulty is that the presence of blende slows down roasting, and frequently necessitates a repetition of the treatment.

HANDLING IN ROTARY ROASTERS

One of the few concerns which made an established success of this work, not only had to contend with material much poorer than was originally scheduled—it having been claimed to contain upwards of 15 per cent lead, but in practice contained sometimes little more than 10 per cent—but was further handicapped by the lack of suitable fuel. As this had in any case to be imported, the roasting furnace was gas-fired as a further means of economy, although the latest hearths elsewhere are stated to be of the pulverized coal type. The cylindrical sloping roaster used differs from the usual rotary calciner in that it rotates only a few times per hour. This is because advantage is taken of the fact that the mass will not sinter, and the slow movement turns over the fine mass of mixed poor sulphides, and allows roasting to proceed unhampered.

As distinct from the large rotary calciners engaged in the U.S.A. which roast up to 36 tons per 24 hour shift, the foregoing roasters worked from 6 to 8 tons per 24 hours. Judging by pre-war prices, it might be thought that with a poor lead content of the kind, this system could never pay its way, but the nature of the deposit was such that on occasion the percentage could rise sharply to as much as 42 per cent. Throughout the roasting, the mass remained of a powdery disposition, and the slow turning-over exposed fresh surfaces to the oxidizing conditions, as gathered from previous experience. In other words, the cylindrical shell was revolved to handle the mass to best advantage within a fixed time schedule.

This can be gathered from the fact that using a 3 h.p. motor connected to suitable gearing, the roaster, containing upwards of six tons of ore, was only revolved from three to six times per hour. By converting the original coal to gas, the 24 hour roasting period only consumed 18 cwt. of coal, while two roasters could be attended to by one operative. The cylinders were some 20 ft. in length, and 7 ft. in diameter, and with good working could reduce the sulphur content, which originally averaged 29 per cent, down to from three to four per cent.

EFFICIENCY THROUGH ECONOMY

It was largely because of these economies in fuel, power, and labour, that poor ores of the kind could be economically handled. The fume was allowed to pass along lengthy flues which extended up a sloping hillside, inside of which branches of selected trees or shrubs were suspended, and which also served to collect the fume from the smelting hearths. Despite the advancements made in electrostatic precipitators, this is the method still persevered with. The sulphur contents of the ores handled have been known to reach upwards of 32 per cent, and below 24 per cent, with iron up to 28 per cent, and zinc from 5 to 15 per cent. Should the actual lead sulphide reach proportions sufficient to agglomerate the mass, the process would be rendered uneconomical, and in fact would bring it to a standstill.

The gangue materials, in the form of silica, and calcium sulphate, instead of being unwanted impurities, are beneficial in that they tend to open up the mass and allow the penetration of air to be more free, although otherwise remaining inactive diluents. In this particular process, the iron pyrite likewise is important, since at 530 degrees C. it is wholly converted to oxide, which directly influences roasting conditions. On the one hand, the interval of temperature during which the roasting is active is reduced, while alternatively, the temperature at which roasting begins is reduced by 100 degrees C.

When this system of handling poor lead ores was first inaugurated, it had been hoped to combine the roasting and smelting to produce lead directly, but for different reasons this turned out to be unsatisfactory. The varying

percentage of blende more or less slows down the roasting, and in extreme instances, has been known to necessitate a repetition of the process. Hence it is much better to carry out the roasting according to a time schedule, depending on the composition of the actual ore on hand. This accounts for the small number of rotations applied per hour, and which is increased or diminished as the throughput has to be varied. The mass enters one end of the cylindrical roaster through a baffle arrangement, which ensures good distribution, and which further assists roasting, while the slow movement prevents any undue "dusting" arising.

CONTROL OF CARBON DIOXIDE

By using gas-firing, as distinct from pulverized coal firing, the amount of carbon dioxide formed within the hearth can be more easily controlled, and if the temperature is raised to 860 degrees C. the sulphur dioxide is almost wholly expelled to produce metallic lead. It was this feature which in earlier years had attracted attention, and promoted the claims for combining the systems. To do so, however, meant slowing the process considerably, and with the variable condition of the ore, caused further losses of time, whereby the benefits of the continuous roasting system were largely lost.

By dint of accurately feeding the mass at the number of rotations quoted, and where no tendency to sinter is apparent, the roasted material is discharged for smelting in a reverberatory furnace with fixed working chamber. What little antimony and arsenic contents are present form volatile oxides which are almost completely expelled. Much of the light zinc oxide appeared to be drawn off mechanically, and which to some extent was held responsible for the relatively high flue dust losses of lead, which sometimes reached five per cent of the weight of charge handled. With the low market price for zinc which prevailed in normal times, no attempts were made to apply wet extraction of this metal, but in any case, as the original content was frequently not more than six per cent, it is doubtful if it would have paid its way.

Amongst different methods of conducting the roasting are arrangements for periodically reversing the gas current and means for heating the air for burning the gas. In this way, it is a simple matter to apply reducing or oxidising conditions as the need arises. This represents an important feature, since apart from the direct reduction caused by carbon dioxide, a certain amount of interaction between sulphate and undecomposed lead sulphide appears to be responsible for pellets of metallic lead being formed, and subsequently being oxidized to lead oxide. Conditions of the kind would be of little moment if the ore contained appreciable silica contents, as the lead oxide would then become absorbed as lead silicate, but the silica content is rarely more than some two per cent, and hence forms the easily fusible basic silicates only, while at times an intermediate silicate is formed. Despite this, the freedom from sintering apparent aroused interest in possible proposed methods of passing the mass over a form of electro-magnetic belt separator as a means of direct concentration, since in some instances there was upwards of 85 per cent of material other than actual lead.

SMELTING THE PRODUCT

When the roasted mass is discharged from the lower end of the hearth, it is spread out on the floor to cool down, a feature which has always been open to a certain criticism because of thermal losses sustained. Whereas the higher silicates of lead are difficult to fuse, and material with lead oxide to silica in the ratio of 1 : 18 is a somewhat infusible mass, all lower silicates are comparatively easily dealt with. What happens when these latter are reduced by carbon alone is that part of the lead is reduced and leaves behind the higher acid silicates. In the laboratory this is circumvented by directly precipitating the lead by metallic iron at a bright red heat, and for which reaction 524 parts of the silicate require 112 parts of iron theoretically, but it is too costly to stimulate on the large scale. By substituting the requisite amount of ferric oxide and carbon, the whole of the lead is reduced, with formation of a ferrous silicate slag, and this is the method which is used in the foregoing instance, where the presence of the high iron content mentioned is of particular importance, and without which the process could not be so economically carried out.

The sulphur content remaining in the roasted mass is largely represented by undecomposed calcium sulphate, but which in presence of the 28 per cent iron oxide is of little account, as the material forms an easy fusible slag. There is, however, a fair proportion of this still represented be undecomposed lead sulphate, which is likewise converted to silicate with evolution of the sulphur gases. Depending on the amount of lead present to be reduced, the addition of carbon in the form of fine coal ranges from 2.5 to 7 per cent, together with siliceous slag in proportion (according to the amount of iron oxide present) to form 2 FeO. SiO_2 or 70 per cent FeO, and 30 per cent silica approximately. The pulverized materials are first laid out and then turned over several times before charging. A pulverized coal-fired reverberatory furnace is employed, and the smelting proceeds comparatively easily, with the lead tapped at frequent intervals from the bowl-shaped hearth, while the sulphur gases emitted by the interaction with the siliceous slag pass to the flues.

A MODICUM OF LEAD SULPHIDE

Although in the laboratory, where conditions are more accurate, the lead is produced almost quantitatively in metallic condition, there is always a certain modicum of crude matte or lead sulphide when tapped from the reverberatory furnace, and for which reason it is not run into pig-moulds, but into an improvised settler mould from which this material is easily separated. This incidentally removes any small proportion of copper.

The dry assay method is preferred for figuring out charges, as larger samples can be dealt with than by using the conventional molybdate or chromate titration methods, and incidentally, the lead buttons obtained can be cupelled directly for silver assay. The silver content ranges up to 30 oz. per ton, and after cleaning the lead by usual methods, the metal is subjected to the Parkes process where addition of a few lb. of zinc suffices to recover this silver which helps to cover the costs of the system.

Correspondence

TRENDS IN METAL MINING

To the Editor, *The Mining Journal*,

Sir,—In reply to Mr. Steer the tense I used was the past and it is generally accepted that the *pneumatic* leg was developed about the same time in Sweden and the United States where in both countries it was used in the late middle 'thirties for drilling in comparatively soft iron ore. It was soon taken up by progressive metal-mining companies who recognized the ubiquity of a device that could drill small rounds in any direction, but it is true that the air leg did not expand into common usage until the tungsten carbide bit was developed, as Mr. Steer rightly says.

If his firm were making air legs (in Germany?) before the Swedes and Americans, it is not generally known or accepted and certainly has not been well publicized.—Yours faithfully,

J. B. RICHARDSON.

"The Kennels,"
Chorley Wood, Herts.
June 1, 1953.

(*Mr. Steer's letter appeared in last week's issue.*—Ed., *M.J.*).

MACHINERY AND EQUIPMENT

Conveyor and Elevator Belting for the Mineral Industry

Interesting facts concerning conveyor and elevating belting are contained in a pamphlet published by the Dominion Rubber Company Ltd., wherein it is pointed out that the foundation and mechanical strength of these beltings lies in a carcass of specially-designed woven duck. This duck must have strength both laterally and longitudinally for fastening purposes and conveyance operations, and must be flexible. The rubber friction of these belts manufactured by the company serves to unite the plies, and the cover protects the carcass against abrasion and deterioration.

"Matchless" belting is forwarded as suitable for carrying heavy ores, rock and like materials and is recommended by the manufacturers for underground trunk and drift conveyors in mines. These conveyor belts can be supplied with 28 oz., 32 oz., 36 oz., 42 oz. or 48 oz. duck as operating conditions and tensions demand.

Dominion Giant belting is intended for transportation of coal at pit, power station or gas works, as well as sand or clay, and can be supplied in similar ducks to the Matchless. The Giant coal conveyor is, however, designed for rugged service at the face or gate road. The company's Security belt is designed for service in factory or warehouse, while the Dominion heat-resisting Conveyor is designed to transport hot materials, and, in extremes, may be fitted with an asbestos ply under the cover. Temperatures below 150 deg. F. have little effect upon the belt.

The most valuable feature of a good elevator belt is presented as being a strong and heavy carcass with enough mechanical strength and body to hold the bucket bolts and withstand rough treatment in the elevator boot, together with a flexibility which allows bend around the pulleys. Matchless and Giant elevator beltings are designed for the conveyance of crushed stone, coal, ore or slag to heavy or moderate conditions, and can be furnished with 32 oz. or 36 oz. and heavier ducks.

Belt widths of these equipments range as from the 12 in., through the 14, 16, and 18 in. models, grading up gradually to the largest widths of 54 in., 60 and 72 in. Thirteen belt widths comprise the complete range. These carry materials ranging from 2 in. mixed with fines to 35 in., mixed with fines, and from 2 in. of uniform size to 18 in. uniform size.

A Heavy Duty Rear-Dump Wagon

The Tournarocker, by R. G. Le Tourneau Inc., is a rubber-tyred haulage unit for rough work and heavy loads. The unit is carried on four single 21.00 x 25 low pressure tyres almost 6 ft. in diameter and 2 ft. in width, which normally operate at between 30 and 40 lb. pressure but which can work on pressures as low as 20 lb. for maximum ground contact. The top rim of the carrying bowl is 9½ ft. x 12½ ft. in square measure capacity.

The construction of the Tournarocker has been radically simplified from that of a conventional heavy-duty hauler. In place of a foundation frame and body sub frame, Tournarocker hitches the rear and front wheels through a horizontal yoke extending rearwards from the kingpin and pivoted to the body itself just above and ahead of the rear wheels.

In the dumping operation, separate braking of the front and rear wheels utilizes the body weight to aid the front wheels to pull away from the edge of a soft dump. When the bowl is lowered, the prime mover wheels are pushed forward 6½ ft. and the wheel base is lengthened from 9½ ft. to 16 ft. In the travel position, the unit is 29 ft. in length, while in the dumping position it is 24½ ft. in length.

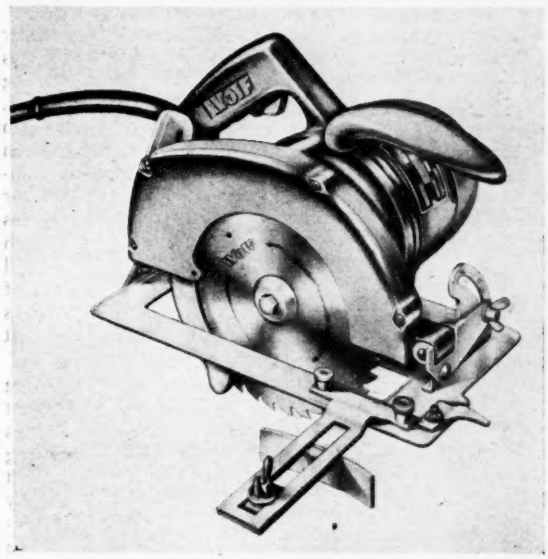
The body is all steel, the front being ¼ in. in thickness and the sides of ½ in. heat-treated plate. On this, 1½ in. billets are welded at 8 in. intervals with ¾ in. tool-steel strips welded on top as a facing. To eliminate the freezing of materials in winter, induction body heating is available. The torque converter is simple, with single impeller, turbine and reactor, and operates at low pressures. It does not depend on tight fitting oil seals for its efficiency.

Some safety features include front wheel drive, a low centre of gravity established because in the dumping position the overall height is only 13 ft. 3 in.

The Tournarocker is supplied in three sizes. The 9-ton D has a capacity of 10 yd., 122 h.p. and speeds to a maximum of 28 m.p.h. The 18-ton C has a capacity of 18 yd., 186 h.p. and a maximum speed of 40 m.p.h. The last of the range is the 35- or 50-ton custom-built A model which is 33 or 41 yd. capacity and has a choice of transmissions, 275 or 450 h.p. engines, with speeds up to 39 m.p.h.

A Multi-Purpose Saw

In designing the new Wolf 7 in. heavy duty portable electric saw Type RS7, the primary considerations were to produce a machine with a large conservatively rated motor, high speed/torque characteristics and with effective speeds for the various types of saw blades and abrasive cutting disc wheels. These considerations have resulted in the development of a motor with a power/work-output which has been found capable of cutting 14 ft. of 2 in. seasoned oak per minute. The use of this powerful motor necessitated all components being of comparable strength. In addition, both motor and mechanism had



The new Wolf 7 inch portable heavy duty saw

to be housed in casings of normal size and the whole machine kept down to a weight not exceeding 17.25 lb.

The motor is mounted transversely at a right-angle to the blade; the drive being by means of heavy helical gears. Balanced running is assured by means of the dynamical balancing of all moving parts, and the cutting line is kept clean by the introduction of a volute on the inner surface of the guard which causes the sawdust to be ejected at the rear of the machine behind the operator.

The depth of cut is adjustable to a maximum vertical cut of 2$\frac{5}{16}$ in. Bevel cuts are made up to an angle of 45° and to a depth of 2 in. Angle adjustments are made by a conveniently placed pointer, and a wide selection of blades is available for sawing different materials. For cutting plain and corrugated sheet metal up to 20 gauge a friction blade is available. Cement, stonework, brickwork and asbestos sheet can be cut rapidly and easily by fitting an abrasive disc.

For convenient and safe handling a strong steel carrying case is available. The saw blade revolves at 4,200 r.p.m. with no load and 3,000 r.p.m. at full load with watts input of 1,050. The overall length of the machine is 14½ in., its net weight is 17¼ lb. and its gross weight 20 lb.

The unit is envisaged as filling a role in surface work, maintenance and the erection of buildings on mining sites all over the world, and is designed for use both at home and overseas.

METALS, MINERALS AND ALLOYS

This has been a quiet week for the metals as besides the closing ot the Metal Exchange on Monday afternoon and Tuesday the Coronation celebrations have exercised a diversionary influence abroad. Even in the United States the event of the Coronation affected business.

It is announced from Washington that Mr. Simpson has dropped his bill for a sliding scale duty on imported lead and zinc, and wil lintroduce a compromise measure which is understood to be acceptable to the Eisenhower Administration. It would: (1) extend for one year the Reciprocal Trade Agreements Act which expires on June 12; (2) increase the size of the Tariff Commission from six to seven members, thus assuring a Republican majority. (The Commission hears domestic industry requests for tariff protection and makes recommendations to the President); (3) require the Commission to act within nine months, instead of a year, on applications for greater tariff protection. The new Bill wolud thus leave out the main controversial provisions in the original Simpson Bill which would have made it easier for domestic producers to obtain tariff protection. The original Bill would also have imposed restrictive quotas or tariffs on imports of oil, lead and zinc, and have given the Tariff Commission mandatory authority to fix higher tariff rates by removing discretion from the President. Mr. Joseph Martin, Speaker of the House of Representatives, told reporters thta the new compromise Bill could be approved by Congress without much trouble.

COPPER.—The tone of the copper market in New York has been rather quieter and the opening of the Commodity Exchange for copper futures on Monday revealed an anticipation of a lower trend, with July selling at 28.75 c. per lb. and a spread of over 3 c. between that month and May of next year, when 25.50 c. was quoted. At home the Ministry of Materials reduced their prices at the end of last week by £1 per ton to £252, following the easier tone in New York. However, next month is expected to show more clearly the real trend of the market. For the moment consumers' needs for June have been met and there is a tendency among them to hold their hand, particularly as fabricators shut down for vacations in that month. An important deal with the D.M.P.A. has been announced by the chairman of INCO for the delivery of 50,000 tons of electro, further particulars of which will be found in our Notes and Comments this week.

The great copper activity in the U.S. in the first quarter of the year is indicated by a Bureau of Mines statement which computes the consumption of refined copper at 398,354 s.tons compared with 369,409 for the same period of last year. Smelter production was less than in the comparable quarter at 254,857 s.tons against 260,835, but production of refined was 304,728 s.tons (292,355) owing to an increase in imported ore and concentrates. Imports of refined copper were some 19,000 tons up at 87,607 s.tons with exports almost halved. Stocks, however, showed little change with refined 800 tons higher at 31,800 and blister 5,000 tons less at 184,000 s.tons.

LEAD.—Lead has continued to advance on the London Metal Exchange and closed on Wednesday at £87¼ for prompt and £84⅛ for forward. In the United States the policy of watchful waiting, noted above in connection with copper, is also applicable to lead, though the metal has a steady undertone. Consumption in March at 101,123 s.tons was best since October of last year. Bookings for June delivery are reported at from 85 to 90 per cent of intake. Imports into the United States in March from Mexico, Canada, Peru, Yugoslavia and South Africa are reported as 48,449 tons, mostly in metallic form.

It is reported from Guatemala that one of the most important lead and zinc mines in Central America, the Cia. Minera do Huchuetenango, in the north-west of the Republic, has been closed down owing to the present prices of those metals. The property has been producing for approximately three years. On the other hand the Cia. Minera, owned by Hoover mining interests and situated near Coban in the north of the Republic, is continuing operations.

Shipments to battery makers improved in April to 1,244,000 units. The figures for April and the two previous months are considerably better than for the same period last year, but quite markedly below those of the same period of 1951. Total shipments for the whole of 1952 were approximately 22,500,000 units.

TIN.—Tin prices have continued to oscillate daily, especially in the Straits, with a declining tendency. June is quoted on the commodity exchange in the U.S. at 94½ c. and July at 94 c. Commodity exchange "futures" anticipate a lower trend. Spot metal was 96 c. on Wednesday.

Straits shipments in May totalled 5,155.25 tons. Most went to the United States to which 2,488 tons were shipped; continental Europe took 834 tons; the U.K. 755; India 415; the Pacific 288; Canada 125; South America 104; and the Middle East 61.

At the annual meeting of Patiño Mines and Enterprises in New York last week, the vice-president stated that the company was trying to work out a programme for payment for its nationalized properties in Bolivia, which would be fair to the stockholders. However, no firm agreement had been made and the Bolivian Government, after favouring a settlement based on 5 per cent retention of the value of the sales which had been proposed, was now suggesting that the percentage should be lower. It was, however, the indirect tax under which they were required to sell foreign currency to the government at the rate of Bs.60 for one United States dollar when the free market rate was four or five times that figure, that hit the company worst. It will be recalled that at an earlier stage, when the Government published proposals of indemnification for the nationalization of the properties of the three leading companies, that possible claims amounting to much larger sums against them were also indicated. One such claim is now suggested by a La Paz despatch that the Patiño Mines have been ordered to find Bs.391,000,000 for back-pay to their employees, following on a Court judgment in a suit initiated by the Minister of Mines, Sr. Juan Lechin, a former head of the Mineworkers' Union.

As regards the future of the Texas Smelter, Mr. Clark Thompson, Democratic Representative for Texas, has told the Senate Banking and Currency Committee that the Defence Department has certified the essentiality of continuing the smelting operations and, therefore, this was not the time for turning the smelter over to a private corporation.

ZINC.—Prices have continued to improve on the Metal Exchange and on Wednesday closed at £72¾ for prompt and £72¼ for three months. The U.S. price continues at 11 c. E. St. Louis, but activity is at a low ebb. U.S. consumption of slab zinc in March was a record at 94,452 s.tons compared with 84,098 tons in February.

ALUMINIUM.—Mr. Nathanial Davis, President of Aluminium Ltd., stated in Montreal recently that their distributing subsidiary in the U.S., Aluminium Import Corporation, had contracted to supply a total of 600,000 s.tons of primary metal to Alcoa, and 186,000 s.tons to the Kaiser Aluminum and Chemical Corporation. The period covered is from 1953 to 1957 and about half has already been taken up by forward contracts. Contractual sales to the U.K. have been revised to the extent of 176,000 s.tons, and, of course, there is the ever-increasing output of Alcan, but the growth of demand in America is still keeping aluminium scarce and supply falls short of demand

Reynolds Metal Company would like to come into the projected "third round" for aluminium producers in the U.S. which would offer them additional tax immortization and a second Government supply contract, but the Government are unwilling to grant these favours except to new producers.

MANGANESE.—Allocation of manganese ore was practically suspended by the D.M.P.A. recently who stated that supplies and requirements were now practically in balance. It is estimated that provision has been made under the expansion programme for annual supplies to the U.S. of some 2,846,000 tons by 1955, and still higher tonnages thereafter.

NIOBIUM.—The new plant of the Norsk Bergverk A/S to treat ore from the Soeve mine, near Ulefoss in S. Norway, which

is being constructed with U.S. Government finance, is now on a trial basis and it is hoped to start full production next month. The plant is rated at 40,000 s.tons of crude ore averaging .03 per cent of niobium.

QUICKSILVER.—The U.S. Bureau of Mines reports continued activity in quicksilver consumption lines. Imports in the first quarter of the year were 24,625 flasks, one of the largest totals recorded since the publication of records began after the end of the war. Of this total—51 per cent came from Spain; 30 per cent from Italy; 12 per cent from Mexico; and 7 per cent from Yugoslavia. Domestic production also increased to 3,530 flasks in the period under consideration. One of the causes of the big increase in consumption shown in the fourth quarter of 1952 and the first quarter of 1953 was to supply the new chlorine and caustic installations using quicksilver cells. With the rising supplies prices trended downwards from $217/219 at the beginning of the year to $195/198 currently.

TUNGSTEN.—We have again been unable to hear of any business being done in the tungsten minerals and continuation of this state of affairs may result in transactions being on the basis of " subject to negotiation " only.

GOLD.—The production of gold in Western Australia in April reached the high figure of 102,464 f.oz.

Iron and Steel

Interest in iron and steel, and indeed in all commodity markets, has been completely submerged this week by the Coronation festivities. Moreover, the period of the annual holidays with pay is now close at hand with its inevitable effect on production. The shortage of steel outputs has begun before the makers have been able to overtake their commitments and it is significant that further substantial purchases of foreign material have been negotiated to keep supplies abreast of the heavy requirements of British industry.

Expansion of iron and steel exports is still delayed. With four exceptions British quotations are competitive, and European prices, moreover, are moving upwards. But import restrictions are rigidly maintained, and the free exchange of commodities still awaits an improvement in international relationships.

In some of the light foundries difficulty is experienced in maintaining full employment and managements have reduced their purchases of both pig iron and scrap. This is a matter of little concern to blast furnacemen since the overall demand for pig iron is heavy and consistent. Requirements for the steel plants exceed the supply and makers of haematite, low and medium phosphorus and refined iron have all the orders they can possibly handle.

Deficiencies in the deliveries of home produced steel sources still persist. The sheet bar position is a little easier, but both slabs and billet are scarce and substantial tonnages of foreign material are required to keep the re-rolling mills in regular operation.

The rising activity of the motor industry is no longer menaced by a shortage of sheets though substantial enquiries are in circulation for prompt shipments to the U.S., Canada and South America. There is no lack of specifications for heavy sections, joists and channels, but the outstanding feature of the steel trade at the present moment is the overwhelming demand for steel plates for the shipyards, boiler makers, wagon builders and power plant producers. Special consideration is now being given to the urgent needs of the shipbuilding industry but the improvement can only be slight until capacity is increased. In the meantime, the expected arrival of a few consignments of plates from Austria will afford temporary relief.

The London Metal Market

(From Our Metal Exchange Correspondent)

The period under review has been influenced by the Coronation activities, and interest has been smaller than of late. There has been slightly more demand for cash tin, but even in spite of this the backwardation has not reappeared. The Eastern price on Thursday morning was equivalent to £750¼ per ton c.i.f. Europe.

The shortage of lead stocks in this country is reflected in the growing backwardation, but it is hoped that the position will not get as serious as that which developed last month. It is felt in many quarters that the time has come for the Committee to review the standard lead contract with the object of removing some of the existing anomalies and also of shortening the delivery period, the length of which is now proving embarrassing to dealers.

The zinc price has tended to firm up in sympathy with lead, and it looks as though a small backwardation may also develop for this metal, as the Ministry is apparently anxious not to offer material freely for fear of being accused of depressing the price.

The copper market on the Continent remains firm, with wirebars valued in the neighbourhood of £245 per ton ex works. The draft of the proposed new standard copper contract has now been circulated to members of the London Metal Exchange and comments invited by June 20, so that it is hoped the final form will be published early in July.

Closing prices and turnovers for the week are given in the following table:

	May 28		June 4	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£725	£727½	£725	£727½
Three months	£725	£727½	£725	£727½
Settlement	£727½		£727½	
Week's turnover	480 tons		640 tons	
Lead				
Current month	£90½	£91	£88½	£88½
Three months	£81½	£81½	£84½	£84½
Week's turnover	4,950 tons		3,300 tons	
Zinc				
Current month	£68½	£69	£72½	£73
Three months	£69½	£69½	£72½	£72½
Week's turnover	3,375 tons		2,825 tons	

JUNE 4 PRICES

COPPER

Electrolytic .. .. £252 0 0 d/d

TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered, 10 cwt. and over .. .. £225 per ton
Crude (70%) .. .. .. £210 per ton
Ore (60% basis) .. .. .. 20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) .. .. £483 per ton

OTHER METALS

Aluminium, £161 per ton
Bismuth (min. 4 cwt. lots) 17s. lb.
Cadmium (Empire), 13s. 10d./14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96%-98%) £280/£295
Osmiridium, £40 oz. nom.
Osmium, £65/70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £70 5s./£70 10s. ex-warehouse
Selenium, 30s. 6d. nom. per lb.
Silver 74d. f.oz. spot and f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 65% 9s. lb. c.i.f.
60% 8s. 9d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £14 18s. per ton c.i.f.
" " (concentrates) £14 18s. per ton c.i.f.
" " Refractory £14 10s. per ton c.i.f.
Baluchistan Metallurgical .. £16 11s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26 - £27 d/d
Magnesite, Raw .. .. .. £10 - £11 d/d
Molybdenite (85% basis) .. 103s. 10½d. per unit c.i.f.
Wolfram (65%) .. .. .. World buying 305s. - 315s.
" " .. .. .. 352s. 6d. Selling
Scheelite .. .. World buying 290s. - 300s.
" .. .. 342s. 6d. Selling
Tungsten Metal Powder .. .. 25s. 9d. nom. per lb. (home)
(for steel manufacture)
Ferro-tungsten .. .. .. 22s. 10d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £35 13s. 9d. d/d per ton
Ferro-manganese, home .. .. £49 15s. 0d. per ton
Manganese Ore U.K. (48%-50%) .. .. .. 6s. 1d. per unit
Brass Wire .. .. 2s. 6½d. per lb. basis
Brass Tubes, solid drawn .. 1s. 11d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Gilt-edged were firm but in most other sections there was little change although the undertone was quite sound.

Kaffirs were dull and prices mainly moved downward. The Cape and Paris displayed no interest, but the flat tendency in stocks which were recently bright cannot be wholly attributed to the end of the account and general lack of interest. Randfontein fell 2s. on selling by speculative holders. This shake out should now have placed the shares on a fairly steady level taking in view the prospects for the next few years.

Among finance houses, Johnnies eased on selling of the Freddies group shares. Anglo American were marked down as a precautionary measure in front of the report which can be regarded as satisfactory in the circumstances. Profits for the year were higher in contrast to some other finance houses and it is probable that this improvement came almost entirely from investment income. Shareholdings have increased in book value to £19,300,000 carrying a market value of £32,000,000. In recent years some doubts have been caused by the very rapid expansion of this concern since the end of the war, but it is undoubtedly the most powerful finance house in South Africa. A period of digestion, however, appears to be indicated. One of its main interests is now the O.F.S. in which large sums have been invested.

The chairman of East Champ d'Or indicated that the pumping of slimes to the Randfontein plant can be expected to begin early in 1954 when the latter company has extended its existing uranium plant to cope with it. Meanwhile preparatory work for the exploitation of the Bird reef continues. Vaal Reefs again eased despite the fact that developments from the Western Reef drive into the property are due during the current quarter. Hendersons Transvaal picked up on the higher profits and rumours that some developments on the copper property next door to Messina can be expected.

The O.F.S. market was flat. News that Freddies North and South would each have to borrow another £500,000 had a depressing effect on the whole group. Production of gold is likely to start later than had been anticipated and the chairman considered that initial operating losses were likely. The loan stock carries conversion rights up to the end of the current year, and this has always proved rather a damper on the existing equity.

West Africans were very idle and recorded no changes of significance. The statement by the chairman of Marlu at the annual general meeting was interesting. Underground developments on the property during the past year were very disappointing to begin with, and great difficulty was found in mining and treating the sulphide ore. The company had considered discontinuing underground operations, but at the eleventh hour conditions improved. Profits of over £2,000 had been obtained in each of the past two months. For the first half of the current year, to March 31, there was an increased profit of £30,000 compared with the corresponding period of the previous year.

West Australian shares improved on better figures and reports from the field. Great Boulder were particularly favoured.

Coppers began the week well. There was some buying on dividend and yield prospects. Selection Trust hardened following the report and figures. Later rumours concerning the flotation of the Bancroft mine were proved groundless and prices finished below the best.

Eastern tin shares were uneven on the lower metal price. The directors of Pari Tin have recommended the acceptance of the offer of 6s. 3d. cash for each of the 2s. shares in the company. This price is in excess of the anticipated distribution if the company is put into liquidation.

Griqualand Exploration have acquired the remaining 75 per cent of the shareholding in the Central Asbestos Company. The purchase consideration will be 130,000 4s. shares and the board propose to increase the capital by £150,000.

Canadian issues were easier following the trend of Wall Street.

Oils, where changed, moved downwards.

FINANCE	Price June 3	+ or — on week
African & European	2 7/16	—1/2
Anglo American Corpn.	6	—1/8
Anglo-French	17/9	.....
Anglo Transvaal Consol.	22/6	.....
Central Mining (£1 shrs.)	28/9	.....
Consolidated Goldfields	34/6	—6d
Consol. Mines Selection	24/4½	.....
East Rand Consols	3/-	.....
General Mining	4	—1/8
H.E. Prop.	40/-	.....
Henderson's Transvaal	8/-	+6d
Johnnies	53/9	—4/6
Rand Mines	3½	.....
Rand Selection	31/10½	—7½d
Strathmore Consol.	36/-	+3d
Union Corp. (2/6 units)	26/9	—9d
Vereeniging Estates	3 1/16	.....
Writs	32/6	—7½d
West Wits	44/4½	—1/10½
RAND GOLD		
Blyvoors	40/9	—3d
Brakpan	10/3	.....
City Deep	21/-	+4½d
Consol. Main Reef	21/10½	—7½d
Crown	32/9	.....
Daggas	3 3/16	.....
Doornfontein	25/-	—1/-
Durban Deep	38/1½	—7½d
E. Daggas	16/3	—7½d
E. Geduld (4/- units)	33/9	+7½d
E. Rand Props	3 1/16	—1/16
Geduld	4½	.....
Govt. Areas	13/9	.....
Grootvlei	22/-	—3d
Libanon	10/3	—9d
Luipaards Vlei	23/9	—9d
Marievale	20/9	—3d
Modderfontein East	18/9	.....
New Kleinfontein	21/10½	.....
New Pioneer	19/6	—2/6
Randfontein	40/-	—2/-
Robinson Deep	10/3	.....
Rose Deep	14/4½	.....
Simmer & Jack	5/-	.....
S.A. Lands	25/-	.....
Springs	5/-	—4½d
Stilfontein	26/9	—9d
Sub Nigel	2 3/16	—1/16
Van Dyk	6/9	—3d
Venterspost	13/3	—9d
Vlakfontein	13/6	—6d
Vogelstruisbult	33/-	—3d
West Driefontein	6 3/16	—1/8
W. Rand Consolidated	52/6	—1/3
Western Reefs	47/3	—3d

O.F.S.	Price June 3	+ or — on week
Freddies	9/6	—2/9
Freddies N.	9/3	—2/3
Freddies S.	9/3	—2/-
F. S. Geduld	2 3/16	—1/16
Geoffries	13/9	—1/-
Harmony	24/6	—1/-
Loraine	9/-	—9d
Lydenburg Estates	11/3	—3d
Merriespruit	8/-	—6d
Middle Wits	15/6	—1/6
Ofsits	35/7½	—2/6
President Brand	24/6	—1/3
President Steyn	22/6	—9d
St. Helena	12/4½	—7½d
Virginia Ord.	13/3	—6d
Welkom	19/3	—1/-
Western Holdings	3 1/8	—1/16
WEST AFRICAN GOLD		
Amalgamated Banket	1/7½	+1½d
Ariston	6/4½	—1½d
Ashanti	21/3	—4½d
Bibiani	6/3	.....
Bremang	2/6	.....
G.C. Main Reef	3/6	.....
G.C. Selection Trust	6/3	.....
Kononga	2/7½	.....
Lyndhurst Deep	1/-	.....
Marlu	1/3	.....
Taquah & Abosso	3/1½	—1½d
AUSTRALIAN GOLD		
Boulder Perseverance	2/3	+1½d
Gold Mines of Kalgoorlie	11/7½	+4½d
Great Boulder Prop.	8/9	+1/-
Lake View and Star	15/3	+6d
Mount Morgan	17/6	—3d
North Kalgurli	12/9	+6d
Sons of Gwalia	6/3	.....
South Kalgurli	7/4½	—3d
Western Mining	12/3	+3d
MISCELLANEOUS GOLD		
Cam and Motor	9/6	—1½d
Champion Reef	5/3	+3d
Falcon Mines	7/-	.....
Globe & Phoenix	24/6	.....
G.F. Rhodesian	5/-	—3d
London & Rhodesian	4/6	—1½d
Motapa	2/4½	.....
Mysore	3/-	+1½d
Nundydroog	5/10½	+1½d
Ooregum	3/-	+3d
Oroville	10/-	+3d

MISCELLANEOUS GOLD (contd.)	Price June 3	+ or — on week
St. John d'El Rey	23/9	.....
Zams	25/10½	+10½d
DIAMONDS & PLATINUM		
Anglo American Inv.	4 3/16	.....
Casts	19/6	—9d
Cons. Diam. of S.W.A.	4	+1/8
De Beers Defd. Bearer	65/-	—1/-
De Beers Pfd. Bearer	15	—1/8
Pots Platinum	8/4½	—4½d
Watervaal	14/-	—3d
COPPER		
Chartered	51/-	—9d
Esperanza	4/-	+3d
Indian Copper	4/3	.....
Messina	3 3/16	+1/16
Nchanga	6 3/16	—1/16
Rhod. Anglo-American	48/3	+6d
Rhod. Katanga	9/7½	+4½d
Rhodesian Selection	13/1½	+3d
Rhokana	17⅛	+⅛
Rio Tinto	19½	—¼
Roan Antelope	13/-	+3d
Selection Trust	32/6	+2/6
Tanks	58/-	+6d
Tharsis Sulphur Br.	42/6	+1/3
TIN (Eastern)		
Ayer Hitam	22/6	.....
Bangrin	7/-	—3d
Gopeng	8/-XD	—4½d
Hongkong	6/3	—1/3
Ipoh	14/4½	.....
Kamunting	8/10½	+1½d
Kepong Dredging	4/7½	—1½d
Kinta Tin Mines	10/3	.....
Malayan Dredging	24/3	+3d
Pahang	13/3	.....
Pengkalen	7/3	.....
Petaling	10/6	.....
Rambutan	11/-	.....
Siamese Tin	21/-	—3d
Southern Kinta	13/1½	—4½d
S. Malayan	23/-	—1½d
S. Tronoh	9/4½	.....
Sungei Kinta	13/1½	.....
Tekka Taiping	4/9	.....
Tronoh	22/-	+3d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	9/4½	+3d
Beralt Tin	26/10½	—1½d
Bisichi	4/-	.....
British Tin Inv.	12/4½	.....
Ex-Lands Nigeria	3/10½	.....

TIN (Nigerian and Miscellaneous) contd.	Price June 3	+ or — on week
Geevor Tin	10/-	.....
Gold & Base Metal	3/6	.....
Jantar Nigeria	13/6	.....
Jos Tin Area	12/-	—1/-
Kaduna Prospectors	2/3	—6d
Kaduna Syndicate	2/3	—9d
London Tin	5/-	+1½d
United Tin	2/6	.....
SILVER, LEAD, ZINC		
Broken Hill South	41/10½	.....
Burma Mines	1/6	.....
Consol. Zinc	24/-	—6d
Lake George	9/4½	.....
Mount Isa	33/9	.....
New Broken Hill	18/4½	.....
North Broken Hill	51/3	+7½d
Rhodesian Broken Hill	10/10½	+1½d
San Francisco Mines	22/6	.....
Uruwira	3/4½	+7½d
MISCELLANEOUS		
BASE METALS & COAL		
Amal. Collieries of S.A.	36/-	+6d
Associated Manganese	45/-	—2/3
Cape Asbestos	20/6	+1½d
C.P. Manganese	51/-XD	—3d
Consol. Murchison	25/-	—1/-
Mashaba	7¼d	.....
Natal Navigation	3 1/16	+1/16
Rhod. Monteleo	8/9	.....
Turner & Newall	51/-	+1/6
Wankie	13/9	—1½d
Witbank Colliery	3½	—1/16
CANADIAN MINES		
Dome	$33¼	—2
Hollinger	$25¾	.....
Hudson Bay Mining	$79¼	.....
International Nickel	$71⅛	+⅛
Mining Corpn. of Canada	£4 1/16	—1/16
Noranda	$120	—4
Quemont	£6⅜	+⅛
Yukon	3/10½	.....
OIL		
Anglo-Iranian	5 3/16	—1/32
Apex	40/-	.....
Attock	26/3	.....
Burmah	43/9XD	—1/10½
Canadian Eagle	30/1½XD	—2/1½
Mexican Eagle	21/4½	+3d
Shell (bearer)	4⅛	—1/16
Trinidad Leasehold	24/6	.....
T.P.D.	31/3	.....
Ultramar	22/3	—7½d

COMPANY NEWS AND VIEWS

Anglo American's Unchecked Progress

The wide realm covered by the Anglo American Corporation makes its annual report, which has just appeared for 1952, a record of Central and South African mining and industrial ventures. Either directly or indirectly this Kaffir mining house appears to be interested in every worthwhile venture that comes within its purview. It has greatly expanded during the post-war period and earnings have increased correspondingly; those for last year again registering an increase. Profit, after providing for taxation was £3,015,000 compared with £2,894,000 (as set out in our issue of April 3), and the dividend is maintained at 6s. a share. Total revenue amounted to £3,735,660 as against £3,706,196, and it appears right to assume that the increase was brought about by higher dividend income rather than from share dealings as the trading period was not propitious for market transactions. The book value of shareholdings was £19,257,500 or £2,332,793 more than previously. At the end of the year, their value, taking Stock Exchange quotations where available and directors' valuation (but not above cost) in other cases, was £31,988,095.

The Corporation retains its technical control of five Far Eastern and two Far Western Rand gold mining enterprises together with seven leading Orange Free State companies. It has a large share interest in other O.F.S. undertakings and Rand gold producers. It manages and is largely interested in several finance and investment companies and has a big stake in Rhodesian Copper and other base metals. Coal interests in the Transvaal are held through the medium of African and European, and in Rhodesia through its Rhodesian investment company, Rhodesian Anglo American. Industrial ventures are varied. Valuable diamond interests reside in a large shareholding in Anglo American Investment Trust (which has a spread of diamond interests), in De Beers Consolidated, De Beers Industrial, Boart Products and the Selling Companies, in Premier Diamond, Consolidated Diamond Mines of South-West Africa, De Beers Investment Trust and the big Diamond Corporation which effects sales of gem diamonds and industrial stones.

The following comparative figures are taken from the accounts:

	1952	*1951*
	£	£
Issued Capital	5,811,103	5,499,128
Reserves, etc.	18,318,604	13,868,694
Registered Bonds	4,081,633	4,081,633
Creditors and Tax	2,353,586	2,087,401
Loans	24,710,493	16,721,340
Investments	19,905,808	17,765,674
Notes and Debentures	4,134,083	2,565,010
Gilt-edged	2,227,391	3,101,251
Loans	18,945,541	8,812,593
Debtors	980,719	1,910,198
Cash	32,248,607	23,377,245
Net Profits	3,615,426	3,594,345
Taxation	600,000	700,000
To Reserve	4,400,000	850,000
Dividends (Total)	2,201,799	2,014,614
Ordinary	6s.	6s.

"Amits" Earns More But Pays Same

The profit and loss account of Anglo American Investment Trust for the year 1952, showed that revenue at £3,756,207 was in excess of the previous year's income by as much as £1,373,690. This increase included an amount of £500,000 received in the form of a scrip dividend from the Diamond Corporation. General expenses were £3,581 higher at £29,371 and after providing £58,000 (£111,000) for taxation, the net profit amounted to £3,668,836 compared with £2,245,727 in 1951. The dividend distribution was maintained at 12s. per £1 share of the £2,500,000 issued capital and required £1,500,000. The allocation to general reserve was stepped up from £750,000 to £2,000,000. This large appropriation has been made to meet the company's commitments to purchase £875,000 shares in the Diamond Corporation at £2 per share by which purchase the Trust increased its interest in the Diamond Corporation to 16.9 per cent. The forward balance at the fiscal year end was £459,396 compared with £290,560 brought in.

During the year a policy decison was made by which it was considered to be in the interests of the diamond industry as a whole for the Diamond Corporation to have a direct and permanent interest by way of shareholdings in the non-Union producers, which involved the Trust's participation to the extent that it exchanged its holdings in Consolidated African Selection Trust, Societe du Miniere du Beceka and Companhia de Diamantes de Angola for £2,500,000 shares in the Diamond Corporation. This holding represented 14.3 per cent interest in the Diamond Corporation but as pointed out above this has been increased to 16.9 per cent during the current year by the acquisition of a further 875,000 shares at £2 per share in the Diamond Corporation. The Diamond Corporation has no Stock Exchange quotation, a fact which explains why the market value of the company's investment at the end of 1952 declined from £18,572,855 to £14,068,341 as the non-Union producers' shareholdings exchanged, were quoted investments.

Sir Ernest Oppenheimer is chairman. Meeting, Johannesburg, June 16.

Sturzenegger's 22nd Appearance

The publication of Sturzenegger's *The Rand Gold Mines* this week, though later than usual, is as welcome as ever.

Long considered as a "must" to all those interested in the South African gold mining industry the 22nd edition, like those of its predecessors, needs no introduction. The event is its publication.

Compiled and published by L. W. Parker, 6 Throgmorton Street, London, E.C.2, and priced at two guineas, the book is a sound investment. The price includes the service of the issue of four quarterly supplements, the first of which, covering the March quarterly results as well as the milling results for April, is issued with the book.

Company Shorts

Middle Wits Reduced Profits.—The reduction in the net profit on investments realized, from £179,625 to £23,141, was the chief factor contributing to the decline in the total revenue of Middle Witwatersrand (Western Areas) during 1952 from £193,545 to £76,603. Outgoings were considerably less, but even so profits before tax were only £34,172 compared with £130,952 in the previous year. Taxation was slashed to a mere £120 from £50,150, nil against £250,000 was transferred to general reserve, leaving the carry forward at the financial year-end at £411,111, compared with £377,059 brought in.

The value of the company's quoted investments appear in the balance sheet at a cost of £754,678 compared with the corresponding figure of £759,151 in the previous year. At the end of 1952 the market value of these investments was £1,340,232, reflecting a surplus of over £585,500 and since the end of the year there has been a further improvement, the market price at April 30 last being £1,576,063. These quoted investments consist mainly of holdings in Virginia O.F.S. Gold Mining, Merriespruit (O.F.S.) Gold Mining, and Stilfontein Gold Mining, together with lesser holdings in other Orange Free State Mining, Finance and Exploratory companies.

Unquoted investments show an increase from £167,900 to £356,889 an increase chiefly accounted for by the acquisition at par of £844,800 shares in Hartebeestfontein Gold Mining Company. Mr. S. G. Menell is chairman. Meeting, Johannesburg, June 25.

Hendersons' Transvaal Again Pay 15 Per Cent.—A preliminary profit statement issued by Hendersons' Transvaal Estates for the year to March 31, 1953, announced that group profit, after all charges, including U.K. and South African taxation liabilities of £103,206 (£96,588), was £94,724 compared with £56,007. Of this amount £12,825 (£10,994) was attributable to outside interests, leaving the parent company £81,899 compared with £45,013. The dividend was maintained at 15 per cent which required a net amount of £46,486 and the sum of £37,351 (nil) was transferred to reserves. Meeting, London, July 15. The dividend will be paid on July 22.

Siamese Tin Syndicate Repeats 150 Per Cent Payment.—In the preliminary profit statement giving the financial results for the calendar year 1952 have proposed a final dividend of 85 per cent, making 150 per cent for the year, the same as was distributed in 1951.

Year to Dec. 31	*Working Profit*	*Taxation*	*Net Profit*	*Dividend*	*To Reserve*	*Carry Forward*
	£	£	£	%	£	£
1952	525,814	327,458	198,356	150	63,347	51,857
1951	489,335	311,800	177,535	150	25,000	39,063

The net consolidated profit for the year before taxation at £525,814 showed an advance of some £36,000 over the preceding year. Tax attracted was, of course, greater, but the net profit figure was sufficiently large to enable the company to more than double its allocation to general reserve although sundry provisions only required £5,000 against £32,438 in the previous year.

Bangrin Tin Dredging Pays A Final Of 20 Per Cent.—A preliminary profit statement issued by Bangrin Tin Dredging covering the company's financial year ended December 31, 1952, showed that a final dividend of 20 per cent was recommended, making 35 per cent for the year, against 70 per cent in 1951.

Year to Dec. 31	*Working Profit*	*Taxation*	*Net Profit*	*Dividend*	*To Reserve*	*Carry Forward*
	£	£	£	%	£	£
1952	217,943	139,640	357,583	35	14,761	38,190
1951	405,633	272,730	132,903	70	20,000	20,000

Meeting, London, July 9.

Decreased Zinc Profits.—Consolidated Zinc Corporation, the Imperial Smelting Corporation, and New Broken Hill Consolidated, all announce reduced profits in preliminary statements for their financial year ending December 31, 1952.

Consolidated Zinc Corporation.—The preliminary statement of the Consolidated Zinc Corporation showed that the trading balance and other income fell to £3,783,163 compared with £7,787,085 in 1951. The net profit, after providing for taxation, depreciation, etc., was £1,671,150 against £2,404,708.

A final dividend of 2s. per share (U.K. currency) is recommended making a total distribution for the year of 3s. per share, equivalent to 15 per cent. This compares with dividends aggregating 3s. per share, plus a bonus of 1s. per share for 1951, or 20 per cent.

Imperial Smelting Corporation.—Imperial Smelting Corporation, a subsidiary of Consolidated Zinc Corporation, announced a trading balance and other income, less expenses, of £1,469,557 against £4,181,659, and a net profit of £965,615 compared with £1,039,475. The dividend is being maintained at 6 per cent.

New Broken Hill Consolidated. — New Broken Hill Consolidated, in its preliminary statement announced a profit, after providing £245,600 (£178,000) for depreciation, of £818,780 compared with £1,338,884. The net profit was £558,020 compared with £619,024. A final dividend of 9d. (U.K. currency) makes a total distribution for the year of 1s. 6d., or 30 per cent, compared with 2s. 6d., or 50 per cent in 1951.

Mr. J. R. Govett is chairman of all three companies. The full report of these three companies have now been issued and will be dealt with in detail in next week's issue.

Great Boulder Doubles Dividend.—Net profit of Great Boulder Proprietary Gold Mines for the year ended December 31, 1952, after providing for all charges, including taxation liabilities, amounted to £195,145 against £128,661. The dividend distribution was raised from 6d. to 1s. per 2s. stock unit on the £312,500 issued capital which required £125,000. The allocation to general reserve was reduced to £70,000 (£135,000) and the carry forward at the company's financial year end was £48,713 compared with £48,273 brought in.

The directors' report states that sales of gold at premium prices brought in £69,646, equivalent to nearly £1 per oz. All figures in this note are expressed in Australian currency.

Globe and Phoenix Increase Ore Reserves.—Bullion revenue of the Globe and Phoenix Gold Mining Company during 1952 expanded from £472,704 to £516,543, while income from other sources brought the total revenue for the year to £533,812 compared with £485,536 in 1951. After providing for all expenses untaxed profits totalled £288,402 against £219,469. Tax attracted was higher, £186,745 (£140,509) which included £25,000 for E.P.L., giving a net profit figure of £101,657 compared with £78,960. The dividend was maintained at 2s. 6d. per 5s. stock unit on the £200,000 issued capital which absorbed a net amount of £52,500. The sum of £40,000 (£50,000) was allocated to general reserve and after providing £2,260 (£3,357) for depreciation, the forward balance at the company's financial year end was stronger at £37,338 compared with £30,441 brought in.

The tonnage crushed during the year was 72,900 tons and the total gold recovery from all sources was 39,732 oz., an increase on the 1951 figures of 300 tons and 1,734 oz. Ore reserves at the end of 1952 were estimated at 229,800 tons of an average value of 18.69 dwt. This is the highest tonnage recorded in the history of the company and represents an increase of 32,400 tons and a decrease in value of 0.38 dwt. per ton over the 1951 figures.

Mr. Alexander McQuisten is chairman. Meeting, London, June 8.

Mining Men and Matters

Coronation Honours List.—The Queen's combined Coronation and Birthday Honours List, published this week, contains awards to many directly connected with the mining industry.

A selection from the list, the third to be published in the Queen's reign, of interest to readers of *The Mining Journal* is given below. Among the three new Barons is Sir Peter Frederick Blaker Bennett, joint managing director, Joseph Lucas Industries and past president of the Federation of British Industries. Among the five new Baronets is Major General Sir Edward L. Spears, chairman and managing director of Ashanti Gold Fields Corporation, Bibiani (1927), etc.

There were 54 new knighthoods conferred in the U.K. amongst which were Mr. J. B. Braithwaite, chairman of the Council of the Stock Exchange; Mr. S. C. Goodwin, chairman and managing director of Goodwin and Co., Neepsend Rolling Mills and Neepsend Steel and Tool Corporation, etc.; Mr. F. J. Hopwood, managing director Shell Petroleum and subsidiary companies, etc.; Mr. S. W. Rawson, managing director of John Brown and director of Firth Brown Steels, etc.

The Lord Mayor of London, Sir Rupert de la Bere, chairman of Burma Estates, etc., received the K.C.V.O. Among those receiving the C.B.E. were Mr. G. R. Mitchison, chairman of Martha Gold Mining (Waihi), Puket Tin Dredging, etc.; Mr. N. A. Gass, a managing director of the Anglo Iranian Oil Company. The O.B.E. was awarded to Mr. C. M. Spielman, chairman, Durham Steel Works, etc.

Among the knighthoods conferred upon representatives of the Dominions and of the Colonies was that for Mr. Roy Welensky, Leader of the Unofficial Members, Northern Rhodesia Legislative Council.

The Anglo-Oriental and General Investment Trust have been appointed London Secretaries of Lower Perak Tin Dredging, and a branch register has been opened at the Transfer Office, 49 Moorgate, London, E.C.2.

The Second Plastics Exhibition and Convention will open at Olympia, London, on June 8.

The Second International Chemistry Exhibition will be held in Paris from June 18 to June 29.

British Insulated Callender's Cables Ltd. have announced that their Lincoln Branch Office will be transferred to 113 Canwick Road. The telephone number will be unchanged at Lincoln 654.

Oakland Metal Company: Change of Address. — Oakland Metal Company have announced that as from Monday, June 8, their address will be 142 New Bond Street, London, W.1. The telephone number and telegraphic address remain unchanged. The company's present address is 94 New Bond Street, London, W.1.

Brush Bagnall Receive Order For Two Locos From N.C.B.—The Brush Group have announced that one of its member companies, Brush Bagnall Traction, has received an order from the N.C.B., South Wales Division, for two 400 h.p. 0-6-0 diesel electric shunting locomotives for use at Cwm Colliery.

MINING ENGINEERS, Senior and Junior, and SURVEYORS, required by large organization for prospecting and development operating in British Guiana. Previous field experience desirable. Salary according to qualifications and experience. Write, giving particulars of age, qualifications and experience, to Box "W.P.", c/o J. W. Vickers and Co. Ltd., 7/8 Great Winchester Street, London, E.C.2. Engagement subject to Ministry of Labour permission.

AGENCE MINIERE ET MARITIME S A

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(Incorporated in the Union of South Africa)

The following is an extract from a statement by the chairman, **Mr. R. B. Hagart,** on the affairs of the company for the year ended December 31, 1952:—

After allowing for general expenses and interest on notes and loan, the net profit for the year was £929,000—an improvement of nearly £73,000 on the 1951 figure.

The financial position of the company continues to be under some strain, mainly because the preservation of our equities in Welkom Gold Mining Company, Ltd., President Steyn Gold Mining Company, Ltd., and President Brand Gold Mining Company, Ltd., has called for much greater contributions than originally anticipated. However, as you are aware, the Welkom mine is now a steady producer, President Steyn is scheduled to commence production in the last quarter of 1953 and President Brand early in 1954. We can look forward with confidence to useful dividend income from these sources in the years that lie ahead.

ORANGE FREE STATE INTERESTS

I propose to comment briefly on the progress at the three mines in which the company is principally interested.

WELKOM GOLD MINING COMPANY LIMITED

During the year 1952, 608,000 tons were milled and the proceeds from the sale of gold and other metals amounted to £1,353,106. The working profit on mining was £15,139. The monthly tonnage milled was rising steadily until July, 1952, when a heavy inrush of water occurred in a development end in No. 1 shaft. Although this was effectively sealed by cementation, development was severely hampered and operations at the mine disrupted. These difficulties for some months reduced the tonnage available from stoping and resulted in a reduction in revenue.

To avoid a recurrence of this trouble a further two levels above the then existing working horizons are being established, and in November, 1952, the deepening of No. 2 shaft as a five-compartment shaft was started so as to provide a further three levels from which underground development could be undertaken. This entails deepening the shaft to 3,750 ft. below the surface, or approximately an additional 800 ft. On April 6, 1953, the shaft had reached a depth of 3,470 ft. and an additional level had been established at 3,230 ft. It is hoped in this way to increase the number of stope faces available and to add to the flexibility of mining operations.

The technical advisers are confident that the profits will show a steady monthly improvement.

From the beginning of 1952 to March 31, 1953, 85,391 ft. of development have been accomplished, of which 20,240 ft. were on the Basal Reef. 19,780 ft. were sampled and 61.93 per cent proved payable, averaging 53.30 dwt. over 6.96 in., equivalent to 371 in. dwt.

A satisfactory ore reserve has been established, and at the year end the payable ore reserves were estimated at 974,200 tons with an average assay value of 5.00 dwt. over a stoping width of 50.00 in., equivalent to 250 in. dwt.

It has been decided to erect uranium plants on this property and that of President Steyn Gold Mining Company, Ltd. These plants will treat the slimes residues of any or all of the five mines in the Welkom area administered by the Anglo American Corporation. The plants are scheduled to be completed towards the end of 1954.

PRESIDENT STEYN GOLD MINING COMPANY LIMITED

Stockholders are already aware that the Basal Reef was intersected in No. 2 shaft at the end of April, 1952, at a depth of 4,980 ft. below the collar and gave an average assay of 71.56 dwt. over a channel width of 13.50 in., equivalent to 966 in. dwt. This shaft has since been completed to its final depth of 5,074 ft. and development towards the Basal Reef was started in the middle of 1952. No footage on reef was accomplished from this shaft during 1952, but since then the Basal Reef has been intersected on the 4,800 ft. level. By the end of March 165 ft. were sampled and 66.67 per cent proved payable, averaging 66.24 dwt. over 5.95 in., equivalent to 394 in. dwt. The "A" Reef, which lies about 650 ft. above the Basal Reef, has been intersected on two levels, and during the first quarter of this year 708 ft. were developed, of which 529 ft. were on reef. 515 ft. were sampled, of which 92.23 per cent proved payable at 10.35 dwt. over 62.24 in., equivalent to 644 in. dwt.

Up to March 31 this year a total of 45,064 ft. of development had been accomplished from both shafts, of which 3,242 ft. were on the Basal Reef. The footage sampled totalled 3,175 ft., and of this 80 per cent proved payable, averaging 65.94 dwt. over a channel width of 5.96 in., equivalent to 393 in. dwt.

Work has started from both shafts on the main connecting haulage on the 4,250 ft. level, and by March 31, 3,881 ft. had been driven. At that date 5,919 ft. remained to be accomplished to effect the connection between the two shafts. It is hoped that ore from stoping operations will be available to enable the mine to come to production in the last quarter of 1953.

Work on the erection of the reduction plant, with a capacity of 50,000 tons per month, was completed towards the end of 1952, and since then small tonnages of development rock have been milled in order that plant and metallurgical tests might be carried out. It has been decided to increase the capacity of the plant to 125,000 tons per month, and work on the extensions is proceeding satisfactorily. It is hoped that the monthly tonnage milled will reach 50,000 tons at the end of 1953, and that this will be increased gradually until 100,000 tons is reached.

PRESIDENT BRAND GOLD MINING COMPANY LIMITED

No. 1 shaft intersected the Basal Reef at the end of the second quarter of 1952 between 4,335 and 4,350 ft. below the collar, and the reef, which was sampled at 5 ft. intervals round the perimeter of the shaft, gave an average assay value of 69.99 dwt. over a channel width of 6.72 in., equivalent to 470 in. dwt. This shaft has since been completed to its final depth of 4,879 ft. and underground development has started towards reef on four separate levels. During the first quarter of 1953, 1,998 ft. of development were accomplished, and it is expected that some development will be on reef shortly.

No. 2 shaft, which at the end of March, 1953, had reached a depth of 4,468 ft., will be stopped at 4,840 ft. and at a later date a sub-vertical shaft will be sunk from the 4,600 ft. level to open up the reef in the southern portion of the mine. It is estimated that the connection between the shafts on the 4,600 ft. level will be completed towards the middle of 1954. Development from this shaft is scheduled to start in the third quarter of 1953, and no development on reef can be expected for some time.

During 1952 two boreholes were sunk on this property to assist in planning underground development and both obtained very satisfactory interesections on the Basal Reef.

Work on the reduction plant has proceeded satisfactorily. It is hoped that the plant will be started for metallurgical and test purposes early in 1954, and that production will commence shortly afterwards.

COAL

Apart from its direct shareholding in the various colliery companies of the group and others, the company's principal coal interests are held through the medium of our associated company, The Vereeniging Estates Limited.

Apart from doubts about any material improvement in the ability of the S.A.R. to carry our coal to the ports, we do not expect early recovery of the lost export trade.

The loss of the export trade did, however, have one commendable result. As you know, for several years export prices subsidized inland prices, but, as a result of transport difficulties which made export an irregular and uncertain business, revenue available for subsidization varied considerably from month to month, thus introducing an element of instability in regulating the average pitsmouth selling price at a more or less constant level.

When exports finally became negligible, inland prices had necessarily to be adjusted, and in July last year new pithead scales were fixed at 5s. 10d. per ton for duff, 8s. 10d. per ton for coal having a calorific value of less than 12 lb./lb. and 9s. 3d. per ton for coal of a calorific value of 12 lb./lb. and over. It will be noted that in these prices there is a recognition of the principle of price differentiation based on calorific values, but it is quite incomplete. Consumers of coal, particularly industrial users, are purchasers of heat-producing units and are prepared to pay a higher price for high calorific value coal if their appliances demand such coal for maximum efficiency. It is, therefore, of no advantage to either producer or consumer to have a fixed price for all Transvaal coals between the calorific range of 12 lb./lb. and 14 lb./lb.

There is insufficient incentive to the producer to market the higher grades of coal which so many consumers are anxious to obtain even at a slightly higher price.

ASBESTOS

Royalties received from Amosa, Ltd., a subsidiary of Cape Asbestos, Ltd., on amosite mined on certain of the company's farms in the Lydenburg district, reached record levels in 1952. Those levels are, however, probably peak, as the asbestos trade, in common with base metals, has suffered a recession in price and volume.

The annual general meeting will be held at 44 Main Street, Johannesburg, at 11 a.m. on Friday, June 12, 1953.

THE CONSOLIDATED ZINC CORPORATION LIMITED

MR. JOHN R. GOVETT ON GOVERNMENT POLICY

The 4th annual general meeting of The Consolidated Zinc Corporation Limited will be held on June 25 at 37 Dover Street, London, W.1.

The following are extracts from the circulated statement of the chairman, **Mr. John R. Govett**:—

The trading balance for the year shows a severe decline compared with 1951 and reflects mainly the fall in the prices of lead and zinc. As a result the profit before taxation amounts to £2,958,759, compared with £7,031,874 for 1951, a decrease of £4,073,115, after charging £769,533 for depreciation, compared with £701,318 in 1951. Taxation on profits for the year is £1,215,734, compared with £4,483,113 in 1951, and the net profit for 1952 amounts to £1,671,150, compared with £2,404,708, a reduction of £733,558. We are recommending a final dividend of 2s. per share which will give a total distribution of 3s. per share. This compares with dividends totalling 3s. per share plus a bonus of 1s. per share for 1951. In all, the total sum retained by the Group out of revenue and capital profits for the year amounts to £1,308,366, which compares with £1,747,302 in 1951.

MARKETS AND PRICES

The year 1952 was one of disillusionment and disappointment to lead/zinc producers. Scarcely had the exhortations of both U.S. and U.K. Governments to increase production become less intense than high prices and restrictions of use began to affect consumption. Current production was already in excess of current requirements at the time when the U.K. Government decided to return these metals to private trading. This step presented a number of difficult problems particularly as it involved the question of Government stock disposal. Unhappily it would seem that the measures to solve these problems were not as well contrived as they might have been. The price of lead, which in the U.K. was £131 on September 30, 1952, fell rapidly on the open market until it reached £73 5s. on April 23, 1953. In the case of zinc a similar picture can be shown; the price on December 31, prior to the opening of the market, was £110, and a low of £63 15s. was reached by April 23, 1953.

The resultant losses have been shared by producers throughout the world and must have totalled many millions of pounds.

Now I must mention another painful matter, namely, the long-term contracts which Governments have entered into with new high cost producers at floor prices which are now well above any ceilings that established producers can hope to reach. Thus subsidised metals from these high cost producers will be added to market supplies and some old-established efficient producers may be closed down to make way for this metal.

Although consumption of zinc in Australia was fully maintained during the year 1952, lead requirements fell short of the tonnage that had been allocated to the domestic market.

I am indeed hopeful that at the prevailing level of prices, consumption of our metals will expand rapidly for civilian use and that a ready market will be found for our increasing production.

I referred last year to the establishment of a small subsidiary company in Canada, The Consolidated Zinc Corporation of Canada Ltd. This company is still very much in its infancy but its first year has been well spent in gaining information on the base metal mining potentialities of various districts in Canada. It has also continued to provide useful services in connection with the marketing in Canada of certain of our products.

I would like to conclude by repeating what is probably already appreciated by all shareholders, and that is that our position has changed with much rapidity from one of great prosperity as a result of very high metal prices, to one where profits are greatly reduced and, indeed, can only be achieved with the utmost energy and efficiency on the part of all. None of you, I know, will accuse us of having been lavish in our distribution of dividends during our four years of existence, but equally do I believe we have had your full approval to the retention in the business of comparatively large sums of money; these, I can assure you, have been—and will be—fully required, especially in view of the difficult times which appear to lie ahead.

I do not wish to conclude this statement on too gloomy a note, so let me add one word of a happier nature—we have built up a splendid organization both in the United Kingdom and in Australia, our properties are in first-class order and every opportunity is being taken both in exploration for minerals and in the development of new processes which we consider will be of benefit to your company.

NEW BROKEN HILL CONSOLIDATED LIMITED

LOWER METAL PRICES AFFECT RESULTS

MR. JOHN R. GOVETT ON MINE DEVELOPMENT COSTS

The 17th annual general meeting of New Broken Hill Consolidated Ltd. will be held on June 25 at 37 Dover Street, London, W.1.

The following are extracts from the circulated statement of the chairman, **Mr. John R. Govett**:—

The profit for the year 1952, before providing for taxation, amounted to £818,780, compared with £1,338,884 for 1951. This reduction of £520,104 results from lower prices having been realized for lead, zinc and silver than in the previous year and from an increase in costs generally and particularly of wages.

The charge for taxation amounts to £260,760, which compares with £719,860 for the previous year. This leaves a net profit of £558,020, a reduction of £61,004 on the result for 1951. Out of this profit the Board have decided to transfer the sum of £400,000 to general reserve, compared with £300,000 last year. The Board recommend a final dividend of 9d. per share, making a total distribution for the year of 1s. 6d. per share. This compares with 2s. 6d. per share for 1951, but is the same as the distribution for 1950. The surplus carried forward is £241,836.

Ore production from the company's leases in 1952 totalled 239,922 tons compared with 212,178 tons in 1951—making a total since production first commenced of just over 1,000,000 tons. The tonnage milled in 1952 amounted to 235,478 tons as against 211,608 tons in 1951.

The expansion of ore reserves continues satisfactorily with an inclusion of a greater amount of the richer lead lode. The total ore reserves as at December 31, 1952, amounted to 2,400,000 tons assaying 10.6 per cent lead, 2.6 oz. silver and 10.9 per cent zinc.

MARKED IMPROVEMENT IN EFFICIENCY

The year 1952 marks an important stage towards the completion of the 10-year programme commenced in 1945 for developing and equipping the mine. Hitherto, use has been made of the Zinc Corporation's main shaft and concentrating mill to hoist and treat all the ore produced from the company's leases; towards the close of the year under review the hoisting of a substantial proportion of the company's ore through the new haulage shaft and its subsequent treatment in the company's own mill were commenced.

Our original long term budget provided for an output in 1953 of 270,000 tons of ore. In the current year to date underground efficiency has shown a marked improvement, indicating that the policy of providing the most up-to-date underground mechanical equipment is being justified to the advantage of the employees and the company; and subject to any unforeseen circumstances beyond the control of the management, we shall be disappointed if the above tonnage estimate for the year is not substantially exceeded, with ore of approximately the same grade as in 1952. This, together with the indications that the rise in the basic wage in Australia has been checked, should stabilize, if not reverse, the upward trend in costs with which we have been faced since the development of the mine commenced. Nevertheless, the sharp decline in the prices for our products must have a serious effect on our revenue.

PROBLEM OF RISING COSTS

In 1948 we had anticipated that the total cost to completion of the 10-year programme would be £5,100,000 including expenditure of £1,565,000 up to the end of that year. Throughout the whole of the development period to date we have, however, been faced with constantly increasing costs of construction which in total have been very considerable. As a result we now estimate that the total cost of completion will be approximately £8,000,000 of which £5,539,000 has been spent up to December 31, 1952.

We remain confident that the mine will be among the lowest cost producers in the world, but with the immediate outlook for metal prices it is not possible to estimate now with any accuracy probable future revenue, or indeed how much we may be able to retain in the business to meet the balance of capital expenditure for the completion of our programme.

While it is hoped that this completion may be achieved without having recourse to further permanent financing, some additional finance of a temporary nature will be required until we see some turn in the trend of metal markets and prices once again become more remunerative.

GOLD FIELDS AUSTRALIAN DEVELOPMENT CO. LTD.

The 20th annual general meeting of Gold Fields Australian Development Co. Ltd., was held on May 28 at Winchester House, E.C.2.

Mr. R. H. A. Neuschild, chairman of the company, presided and in the course of his speech said:—

We operate in Western Australia through our wholly owned subsidiary Moonlight Wiluna Gold Mines Limited. Our own balance sheet shows little change from the position a year earlier at December 31, 1951. The consolidated profit and loss account discloses a profit from operating the Mount Ida Mine, which at the present time is our only active asset, of £44,261, virtually the same as for the previous year. Provision for depreciation, general expenses in London and Australia and directors' fees leaves a group operating profit of £30,626. The combined position of the two companies is that the accumulated loss, which previously stood at £115,264, is now reduced to £84,638.

With a group profit of over £30,000 for two consecutive years, the net liquid position is much better than it was some years ago.

Despite the milling of 25,758 tons of ore, the ore reserves increased by several thousand tons. Following the introduction of lighter drilling equipment with tungsten carbide tipped steel from which the full benefit is now being reaped and an improvement in the underground labour supply, the development footage showed a satisfactory increase. The increased grade of new development in depth in the southern section of the mine is encouraging. As exposed on the No. 7 Level the ore body is reported to be the most attractive yet encountered on any level. Two winzes below the 7th Level have reached the horizon of the proposed 8th Level at a vertical depth of 976 ft. below surface, and have been sunk a total of 323 ft. Of this, 230 ft., or 71 per cent, averaged 18.5 dwt. per ton over a width of 42 in.

Deepening of the main shaft has just commenced and it is hoped that the shaft crosscut will reach the lode on the 8th Level by the end of the year.

As to production this year, to the period ended April 21, 7,914 tons have been milled for a yield of some 3,500 oz. of gold.

The report and accounts were adopted.

MARLU GOLD MINING AREAS

The 18th annual general meeting of Marlu Gold Mining Areas, Ltd., was held on May 29 in London.

Major General W. W. Richards, C.B., C.B.E., M.C., chairman of the company, presided and the following is an extract from his statement circulated with the report and accounts for the year ended September 30, 1952:—

The net profit for the year was £48,011 which, added to the balance of £5,503 brought forward from previous years and a refund of gold premium duty amounting to £3,911, gives a total credit balance carried forward on profit and loss account of £57,425.

The complex nature of the ore-bodies, both surface and underground, has caused the operating staff much concern. Marginal and low grade propositions like Marlu must, of necessity, in order to pay their way, obtain a very high extraction of gold from the ore treated. A small quantity of refractory ore can slow up the operation of the treatment plant, with adverse financial results, and we have not been free from these complications. Nevertheless, gold production increased by 3,204 oz. to 45,751 oz.

In conformity with other mines on the Gold Coast, increases in pay were given to mines employees. Wage increases, plus the continued rise in the cost of equipment and stores, have now about outweighed the financial advantage derived from sales of gold on the "free market."

The mine operating profit for the first half of the current year, i.e. October to March, approximated £85,000—£20,000 up on the corresponding period of the previous year. The continuance of such results, following what I hope you will agree was a year of marked improvement, and the fact that the company is now no longer operating on a bank overdraft, brings the consideration of payment of a dividend a great deal nearer.

Mr. R. N. Hammon, who is well known to us, has been appointed manager in the place of Mr. A. T. Climas and we extend to him and his staff and to our technical advisers, our appreciation of their work on behalf of the company.

The report and accounts were adopted.

BRITISH GUIANA CONSOLIDATED GOLDFIELDS

The 17th annual general meeting of British Guiana Consolidated Goldfields, Limited, was held on Wednesday last at 24 Coleman Street, E.C.2.

Mr. J. Roland Robinson, M.P. (chairman of the company) who presided, in the course of his speech said:—

If you will refer to the profit and loss account you will note that the proceeds of the year's gold production realized £237,294, which is easily a record output for this company. The old Waddington Dredge has been responsible for a quarter of this production, the remainder coming from the Potaro Dredge, from which we have received our first full year's output.

In view of the heavy capital development programme we have ahead of us and the uncertainty as to our immediate profit earning prospects during the next two years, the directors decided to transfer the substantial amount of £11,000 to general reserve, to recommend a dividend of 8 per cent on the company's share capital for the year 1952, and carry forward an increased balance of nearly £5,000 to £14,417.

The areas in British Guiana over which we hold mining rights remain substantially the same. Our drilling activities during 1952 have been confined largely to parts of the Konawaruk area and the upper section of the Mowassie. Though we have not discovered any payable dredging ground on the Upper Mowassie, we have proved an additional 6,000,000 cu. yd. of payable ground on the Konawaruk. This is important in that it extends our life in the Konawaruk by about three years and gives us additional time to write off our concessions and equipment. We have now proved, or partially proved, areas in the Mahdia, Potaro and Konawaruk totalling over 56,000,000 cu. yd. at an average value of 3.59 grains.

As a result of the proving of these larger areas, we have felt justified in examining further the possibility of erecting a hydro-electric station on the Potaro river at Tumatumari, and we have been for some months in close consultation with a well known consultant on this type of plant installation, Mr. Bartholomew, of Vancouver, British Columbia. Our technical advisers will shortly be meeting on the site, and we hope to have their final recommendations in due course. If they are favourable, as we hope, and the British Guiana Government grants the necessary licences on practical terms we shall seek the necessary finance so as to commence work as soon as possible. This would give considerably lower power costs, and result in the double benefit of developing the natural resources of British Guiana and lower dredging costs to the company.

Our new mine camp and the dredge camp at Tumatumari have been practicaly completed. The new road to the Konawaruk has now reached the river, and progress has been made with regard to the erection of a dredge camp at Konawaruk. We are clearing an airstrip on behalf of the British Guiana Government, which is adjacent to the erection site for the Konawaruk dredge. This work is now well advanced in spite of delays caused by exceptionally heavy rains.

During the year under review arrangements were completed to purchase a second-hand dredge which had been operated by Bulolo Gold Dredging Ltd. in New Guiana. This dredge, which has a bucket capacity of 10½ cu. ft., was dismantled on its site and was taken by truck to Lae. From there it was shipped by sea to British Guiana and arrived early in February. It is now at Atkinson Field where preparations are being made for an air-lift to the Konawaruk. Any parts which prove to be too big for an air-lift will be taken up by river transport. This operation will obviously take some considerable time, but every step will be taken to get the dredge to the erection site on the Konawaruk as soon as possible.

During the year our General Manager, Mr. Park, has continued to cope most adequately with the many technical and administrative difficulties which are inseparable from an organization operating in undeveloped hinterland of a British Colony. He came home for consultation and short leave in the middle of last year, and the Board and your technical advisers had much useful discussion with him on our problems.

The dredges have, of necessity, been operating in relatively lower grade ground this year in order to reach higher grade deposits, and we had lost time with the Waddington Dredge which was out of action during the month of March through sticking on a rock bar following the washing away of a dam in a heavy storm. During the next few months the ground to be dug will be of a higher grade. This, coupled with an increased yardage should improve our results considerably. In addition, technical improvements have been made to both dredges in the hope of improving the recovery factor and so saving more gold.

The report and accounts were adopted.

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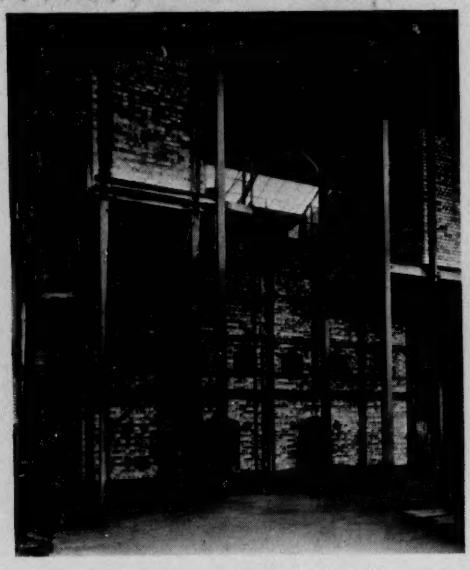

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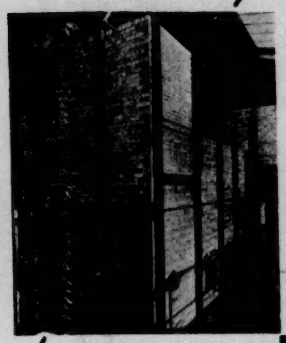

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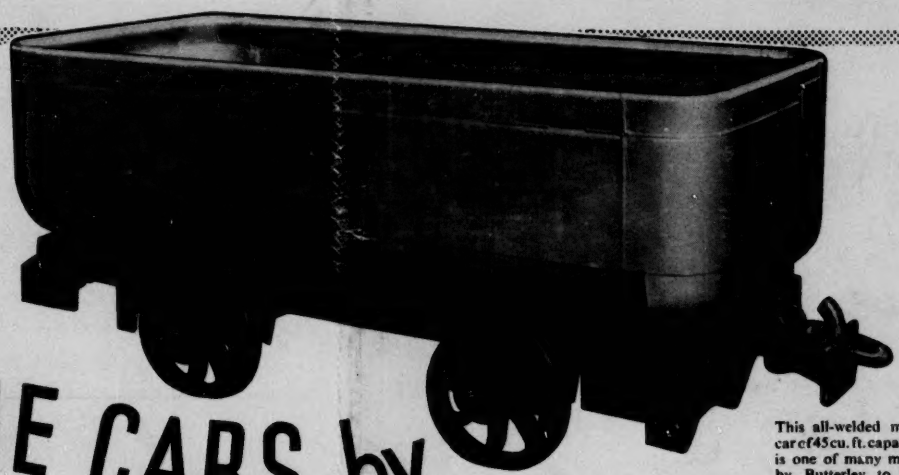

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